JOURNAL of EDUCATIONAL RESEARCH

Volume XXXIII DECEMBER, 1939 Number 4

A QUALITATIVE AND QUANTITATIVE APPRAISAL OF READING EXPERIENCES

FREDERICK L. POND
Meadville (Pa.) High School

Editor's note: The teaching and learning of no school subject has received more attention in recent years than that of the subject of reading Many important phases of reading have been subjected to critical analysis and research. The author here presents two inventions meant to supply information relative to certain qualitative and quantitative aspects of reading experience that should be of assistance to teachers of reading and literature.

ACHIEVEMENT of growth in the quality and quantity of student reading is the major function of a modern literature program. The emphasis upon social values in education can have no function more pragmatic than the production of a population of great readers. Those greater aspects of reading, however, which are evidenced by mature performances with respect to qualitative and quantitative factors have possessed little means of objective appraisal.[1]

As long as the major results of the literature program have no means of objective evaluation or depend upon subjective observation and judgment, the appraisal of improvement in the greater phases of reading must remain largely a matter of conjecture. Objective evaluation must be made possible if fallibility is to be removed in any measure from human judgment. To the degree that means of objective appraisal are provided, individual backgrounds may be more thoroughly portrayed, students may be more strongly motivated toward the whole pattern of mature reading, and improved techniques of instruction may be evolved. The fabrication of inventories for the appraisal of the qualitative and quantitative factors of reading experiences is the object of this discussion.

Symonds[2] has found that the psychological inventory provides for standardization and analysis in its technique. It transcends subjective dependence upon the investigator and provides accurate scoring and

[1] National Council of Teachers of English, *An Experience Curriculum in English* (New York: D. Appleton Century Co., 1935), p. 8.

[2] Symonds, Percival M. *Diagnosing Personality and Conduct* (New York: The Century Company, 1932), p. 16.

objective comparisons between individuals and groups. Furthermore, it is significant that Gates[3] expresses the following: "To recommend wider use of systematic inventories of reading skills and techniques that provide a very detailed analysis of an individual pupil's abilities, interests, and difficulties."

It has been shown by Cowdery[4] and later by Strong[5] and Bernreuter[6] using the Kelley[7] formula, that the weighting of multiple response inventory items is a sound procedure capable of producing measuring instruments of high reliability and validity.

NATURE OF GROWTH

The basic concept upon which the study of growth in reading experiences may be formulated is the development of the pattern from the interests and performances of children to the interests and performances of educated people. Normal maturation and learning should produce eventually a breaking away from juvenile wonder and thrill to the acceptance and understanding of reality which characterize maturity. This intellectual awakening, in turn, is characterized by greater interest in abstract values, social relationships, and in deepened sensibilities.

These natural stages of development are well recognized.[8] In the objective appraisal of the strata[9] of reading performances, one may expect to have this growth measured statistically by differences between ascending grade levels and between groups of probable variation in ability. At the same time, individual differences, revealed by the spread of scores may be expected to exist at each level.

Any device, fabricated to appraise quantitatively and qualitatively the strata of reading performances, must involve an adequate representation of the general pattern of reading. This, in turn, entails the analysis of reading activities into the many separate patterns of which they are composed. An adequate sampling of patterns or categories may then be had.

---

[3] Gates, Arthur I. "The Measurement and Evaluation of Achievement in Reading," *The Teaching of Reading, A Second Report*, Thirty-Sixth Yearbook, Part I (Bloomington, Illinois: Public School Publishing Company, 1937), p. 359.

[4] Cowdery, K. M. "Measurement of Professional Attitudes," *Journal of Personnel Research*, V (1926-1927), p. 131.

[5] Strong, Elbert K., Jr. "Procedures for Scoring an Interest Test," *Psychological Clinic*, XIX (April, 1930), p. 63.

[6] Bernreuter, Robert G. "The Theory and Construction of the Personality Inventory," *Journal of Social Psychology*, IV (November, 1933), p. 387.

[7] Kelley, Truman L. "The Scoring of Alternate Responses with Reference to Some Criterion," *Journal of Educational Psychology*, XXV (October, 1934), p. 504.

CATEGORICAL CLASSIFICATIONS

While some attempts at the appraisal of the quality of reading have been made through the evaluation of preferences for individual titles,[10] larger patterns and categories have found an accepted place in the literature of education.

Fries, Hanford, and Steeves[11] offer a "loose classification of literary experience" under seven types.

The Information Service of the Federal Council of the Churches of Christ in America[12] has ranked various American cities on the categories of magazines which were read most extensively.

Harvey and Denton[13] investigated the reading of various categories of news articles. Punke[14] studied the newspaper and magazine reading of high school pupils in Georgia and Illinois with respect to categories of interests. Grumette[15] compared high school freshmen and seniors with respect to the amount and types of newspaper reading.

Gray and Monroe,[16] in investigating the reading interests and habits of adults, have submitted their populations to comprehensive research with respect to categories of newspaper subjects, uses of recreational reading, types and parts of magazines, types of books, and motives for reading.

Gray and Leary[17] list categories of difficulties which influence reading, such as average sentence length in words, percentage and number of easy words, maximum and minimum syllabic length, etc.

[10] Betzner, Jean, and Lyman, R. L. "The Development of Reading Interests and Tastes," *The Teaching of Reading: A Second Report*, Thirty-Sixth Yearbook, Part I (Bloomington, Illinois: Public School Publishing Company, 1937), pp. 185.

[11] Gray, William S., and Leary, Bernice E. *What Makes a Book Readable* (Chicago: University of Chicago Press, 1935), pp. 115.

[12] Eberhart, Wilfred. "Evaluation in English," *English Journal*, XXVIII (April, 1939), p. 261.

[13] Fries, Charles C., Hanford, James H., and Steeves, Harrison R. *The Teaching of Literature* (New York: Silver Burdette and Company, 1926), p. 67.

[14] Department of Research and Education, Federal Council of Churches of Christ in America, *Information Service*, XVI, No. 28, Nov. 30, 1937.

[15] Harvey, C. C., and Denton, Cecil F. "Use of Newspapers in Secondary Schools," *School Review*, XLVI (March, 1938), pp. 196-201.

[16] Punke, Harold H. "Sociological Factors in the Leisure Time Reading of High School Students," *Library Quarterly*, VII (July, 1937), pp. 332-342.

[17] Grumette, Jesse. "An Investigation into the Newspaper Reading Tastes and Habits of High School Students," *High Points*, XIX (December, 1937), pp. 5-10.

[18] Gray, William S., and Monroe, Ruth. *The Reading Interests and Habits of Adults* (New York: The Macmillan Company, 1930), p. 150.

[19] Gray, William S., and Leary, Bernice E. *What Makes a Book Readable* (Chicago: University of Chicago Press, 1935), p. 115.

Thus, an extensive factor analysis of types of reading materials and types of motivation into various categories has been made. An approach to qualitative and quantitative appraisal has been achieved. Speculation is invited concerning the possibility of arranging an adequate sampling of the many types of reading materials and motives into various groupings and itemizing various categories under each group so that an inventory of reading experiences might be possible of fabrication. Although it cannot be expected that the items of reading experience can be arranged into exact discrete categories, what may be had is a gradation of weighted levels from lower to higher quality or maturity of reading. While overlapping may exist in the periphery of some categories, they do—in a larger sense—possess fields of interest sufficiently individual to be within the limits of tolerance.

CONSTRUCTION OF THE INVENTORIES

Part I of the Inventory of Reading Experiences, the qualitative inventory, represents an analysis and a sampling of ten types of reading materials and types of motivation discussed in the literature of education. Under each type ten ranked categories are listed portraying a general pattern of a phase of reading activity. The total of 100 items presents a comprehensive sampling of the total pattern of reading experiences.

One hundred twenty-four English heads, writers, and state representatives to the National Council of Teachers of English coöperated by questionnaire in ranking the ten categories under each type of activity with respect to the quality of reading which each involves. Based upon these qualitative rankings, Thurstone[18] scales were prepared assigning weights to each category. Thus the group judgment of the 124 individuals was made articulate in fabricating a criterion of reading quality independent of the inventory itself.

TABLE I

THURSTONE WEIGHTS FOR CATEGORIES OF NEWSPAPER READING BASED UPON 124 COMBINED JUDGMENTS OF READING QUALITY

Category	Weight	Category	Weight
Comics	0	Current events	4
Pictures	1	Syndicated columns	4
Athletics	2	Signed essays	4
Crimes and accidents	2	Book reviews	4
Cartoons	3	Editorials	5

[18] Thurstone, L. L. "An Experimental Study of Nationality Preferences," *Journal of General Psychology*, I (1928), pp. 405-425.

Similarly, weights were determined for the categories listed under the remaining nine types of reading activity: kinds of magazines, kinds of books, reading interests, reasons for reading, readability of materials, kinds of writers, radio programs, moving pictures, and profit from reading.

The qualitative inventory, based upon the questionnaire items and bearing the possible responses N (never read), S (sometimes read), and O (often read), was prepared and administered to 292 twelfth graders. The response O (often read) was scored with the criterion-judgment weights. All papers were arranged in descending score order and the upper and lower 27 percents[19] chosen as two groups of extreme deviates with respect to the independent criterion. The percentages of each group, upper and lower, making each of the 300 possible responses was then determined. By the use of the Kelley[20] technique for weighting multiple responses and the Strong[21] weighting chart, scoring weights were determined for each possible response. These weights, ranging from —4 to 4, represent the ability of each response to discriminate between those who are high or low with respect to the quality of reading.

The percentages and weights for Parts of Newspapers are shown in Table II.

TABLE II

PERCENTAGES OF GROUPS OF EXTREME DEVIATES MAKING VARIOUS RESPONSES ON CATEGORIES OF NEWSPAPER READING AND RESPONSE WEIGHTS

Column		(1)	(2)	(3)	(4)
Comics	N	0	0	0	
	S	8	6	0	
	O	92	94	0	
Pictures	N	0	0	0	
	S	10	51	−4	
	O	90	49	4	
Athletics	N	5	8	0	
	S	38	39	0	
	O	57	35	3	
Crimes and Accidents	N	1	1	0	
	S	57	73	−1	
	O	42	25	1	
Cartoons	N	0	1	0	
	S	11	43	−4	
	O	67	23	4	
Current Events	N	0	5	0	
	S	33	72	−4	
	O	67	23	4	
Syndicated Columns	N	9	43	−4	
	S	65	53	1	
	O	27	4	3	
Signed Essays	N	18	63	−4	
	S	70	34	3	
	O	13	3	0	
Book Reviews	N	18	39	−2	
	S	57	58	0	
	O	25	3	4	
Editorials	N	10	27	−2	
	S	59	71	−1	
	O	30	3	4	

Legend:
Column (1) Response. Column (2) Upper 27%. Column (3) Lower 27%. Column (4) Weight.

[19] Long, John A., and Sandiford, Peter. *The Validation of Test Items*, Bulletin No. 3 (Toronto, Canada: Department of Educational Research, University of Toronto, 1935), p. 15.

[20] Kelley, Truman, L. *op. cit.*, p. 505.

[21] Strong, Edward K., Jr. *op. cit.*, p. 63.

Scoring weights computed similarly for the remaining 270 responses of the qualitative inventory (Part I) are shown on the scoring keys.

In weighting the responses in the quantitative inventory (Part II) an independent criterion was secured from the four weeks diary recordings of 363 twelfth-grade students. Recordings were posted daily in four separate weekly instalments and under ten items of reading activity:—hours per day spent in reading and study, visits made to a library, number of magazines read, number of books completed, number of entire evenings spent in reading and study, days in which there was conversation about things to read, number of times a dictionary was consulted, books borrowed to read, books read that were self-owned, and the days on which as much reading was done as was expected of the student.

A total of 70 recordings per week or 280 for four weeks were secured from each of the 363 respondents. The average weekly positive recordings of each individual was used as his criterion score of reading activity independent of the quantitative inventory.

Four weeks after the diary recordings were closed, the quantitative inventory was administered to the same students. The completed inventories were then arranged in the rank order of the criterion diary scores; the upper and lower 27 percents were taken as groups of extreme deviates; and, as in the qualitative inventory (Part I), weights were determined by the use of the Strong Weighting Chart.

RELIABILITY AND VALIDITY

An instrument must sample extensively and carefully into the total field so that the segment on which performance is reported may be a true representation of totality and in order that reliable responses in sufficient number may be secured. The testing of this inner consistency by the method of split-halves, stepped up by the Spearman-Brown formula, produced the reliability coefficients found in Table III.

TABLE III

RELIABILITY COEFFICIENTS OF INVENTORIES OF READING EXPERIENCES

Part I (Qualitative)			Part II (Quantitative)		
Students	Grade	r	Students	Grade	r
189	12	.956	320	11	.907
279	12	.916	279	12	.922
199	11	.892	199	11	.858

The inventories thus measure some qualities with high consistency. The obtained reliabilities compare favorably with those reported for instruments used extensively in the appraisal of skills in reading mechanics.[22]

Validity, defined as the ability of the inventories actually to measure what they purport to measure, must depend upon a definition of what is evaluated. The nature of the questions provide an indication of this; an examination of the correlates provides further information; and an examination of differences found between logically-different groups present comparative considerations.

Frequently, the method of correlations is used to define and establish validity; high correlations logically show close relationships. On the other hand, the same method may be used to establish a validity of a non-duplicative nature[23] as a definition of what is measured in terms of freedom of overlapping with other criteria. These are shown in Table IV.

TABLE IV

COEFFICIENTS OF CORRELATION BETWEEN SCORES ON THE QUALITATIVE INVENTORY OF READING EXPERIENCES AND ON VARIOUS MEASURES RELATED TO READING ABILITY OF 146 TWELFTH-GRADE STUDENTS

Measure	r	Measure	r
Intelligence Quotient (Otis, Advanced)	.235	School Average	.258
Cooperative Literary Acquaintance (1936)	.265	Reading Comprehension (Iowa, Advanced A)	.271
Cooperative Literary Comprehension (1936)	.363	Reading Rate (Iowa, Advanced A)	.081
Vocabulary, Psychological Cpn., Form X	.223	Sims Scale of Socio-Economic Status	.296
Orientation, Lawerenz-Steinmetz	.332	Attitude toward English (Remmers)	.360

Sufficient variation is indicated to evidence that the performances measured by the qualitative inventory are not included in large measure in the data provided by the other instruments. At the same time, what may be considered as degrees of causal relationships are found to exist.

The quantitative inventories (Part II) of the 246 ninth graders showed correlations of .231 with reading rate (Iowa, elementary A), .303 with reading comprehension, and .439 with the qualitative inventory (Part I). The last is in accord with the findings of Schoonover,[24] that individuals who are very active in their reading tend to be readers of materials of better quality.

[22] Mosher, Raymond S. "Reliabilities of Reading Tests," *Journal of Educational Psychology*, XIX (April, 1928), p. 169.

[23] Ruch, G. M., and Stoddard, George D. *Tests and Measurements in High School* (Chicago: World Book Company, 1927), p. 332.

[24] Schoonover, Ruth C. "The Case for Voluminous Readers," *English Journal*, XXVII (February, 1928), p. 114.

A consideration of the critical ratios of the differences found to be present between the median scores of six logically-different groups of 241 ninth-grade students with respect to various criteria related to reading, produced the data found in Table V. The reliabilities of the differences may be considered as indices of the abilities of the various measuring devices to differentiate between the known-to-be-different groups.[25]

TABLE V

COMPARISONS OF THE ABILITIES OF VARIOUS INSTRUMENTS TO DIFFERENTIATE BETWEEN CERTAIN NINTH GRADE GROUPS AND THEIR FELLOWS WITH RESPECT TO FACTORS RELATED TO READING

Indices = $Md_1 - Md_2 / PE_{Md_1 - Md_2}$ Total Students (N) = 241

Groups	N	Quality	Quantity	Vocabulary Psych. Cpn.	Rate Iowa	Comprehension Iowa
Remedial Readers	50	2.88	5.05	9.05	5.43	14.38
Pre-College	51	.58	2.00	4.02	1.13	7.05
Rural	64	.76	.69	3.67	2.85	2.94
Recently Foreign	37	1.20	1.84	4.74	.31	.56
Poor Fusion*	89	1.58	1.62	1.77	6.03	.23
Lateral Imbalance*	90	1.51	1.89	.71	.92	.38

*Betts, Emmett A. "Ready to Read Tests," Meadville, Pa.: Keystone View Company.

Again, a comparison of differences existing between 9B students and 12A students, representing four years of growth toward reading maturity, is shown in Table VI.

TABLE VI

RELIABILITIES OF GRADE DIFFERENCES IN ABILITIES RELATED TO READING
Median Scores

Grade	N	Quality	Quantity	Vocabulary	Rate	Comprehension	Literary Acquaintance
9B	241	−86.78	−.19	41.94	26.00	68.00	33.48
12A	279	−19.29	2.41	56.33	33.35	139.77	51.86
Critical ratios		11.51	.95	17.13	12.67	37.18	29.64

The reliabilities of the differences, considered as indices of discrimination, show very comparable differentiation for the various measures. One may conclude that the measurement of differences in the quality and quantity of reading of the groups has been appraised with validity comparable to that provided by the other instruments.

The small growth indicated in the quantity of reading is in agreement with that expected from previous report in educational literature.[26]

[25] Strong, Edward K., Jr. "Short Cuts to Scoring an Interest Test," *Journal of Applied Psychology*, XVI (February, 1932), pp. 1-18.

[26] Eberhart, Wilfred. *op. cit.*, p. 267.

ITEM VALIDITIES

Speculation is invited concerning the validity of each of ten separate qualitative reading patterns to measure the same function as that measured by the whole inventory.[27] The best measure of this, for multiple-response items, is the correlation ratios between item scores and total scores.[28]

TABLE VII

ITEM VALIDITIES, CORRELATION RATIOS, OF THE QUALITATIVE INVENTORY OF READING EXPERIENCES

N = 189 Twelfth Graders

Item	eta	Item	eta
Parts of Newspapers	.697	Readability of Materials	.738
Kinds of Magazines	.659	Kinds of Writers	.722
Kinds of Books	.628	Radio Programs	.684
Reading Interests	.717	Moving Pictures	.606
Reasons for Reading	.733	Profit from Reading	.729

These correlation ratios indicate the high significance of each item (Table VII). At the same time, they indicate that growth toward reading maturity is a general patterned development, rather than improvement in specific areas.

Item validities also logically may depend upon the abilities of individual items to discriminate between known-to-be-different groups. In Table VIII, the abilities of separate items of the qualitative inventory to discriminate between grade nine and grade seventeen (college graduate level), as a maximum, are shown.

TABLE VIII

RELIABILITIES OF THE DIFFERENCES FOUND IN QUALITATIVE READING ITEMS BETWEEN GRADE NINE AND GRADE SEVENTEEN

Items	Grade 9 (530)		Grade 17 (84)		
	Md.	Q.	Md.	Q.	$Diff/Q_{diff}$
Newspapers	− 5.94	7.58	14.21	5.59	23.43
Magazines	−11.11	7.86	5.96	4.86	21.88
Books	− 8.36	6.09	−1.87	5.67	7.82
Interests	− 6.93	6.23	10.17	5.18	22.20
Reasons	−12.23	8.10	11.00	9.00	18.01
Readability	− 5.33	8.95	10.00	7.71	13.33
Writers	− 4.64	8.02	6.94	7.79	10.16
Radio Programs	− 3.20	7.20	7.33	6.84	10.53
Movies	− 6.55	6.14	−1.50	7.07	12.20
Profit	−13.85	8.06	8.67	8.31	18.61

[27] Long, John A., and Sandiford, Peter. *op. cit.*, p. 15.

[28] Bartlemess, H. M. *The Validity of Intelligence Test Elements*, Contributions to Education, No. 505 (New York: Bureau of Publications, Teachers College, Columbia University, 1931), p. 16.

At the intermediate grade levels, including college freshmen and sophomores, progressive gradations of growth toward reading maturity are evidenced by the median scores of each item. This is in accord with the findings of Betzner and Lyman [29] and Gray and Leary[30] with respect to the stratification of the quality of reading.

It is worthy of note that the smallest growth is recorded under the types of books which were read for here undoubtedly is the school's greatest emphasis.

VERACITY AND OBJECTIVITY OF THE INVENTORY TECHNIQUE

The inventories are constructed as simple questionnaires for the collection of data. There is no indication that they are self-rating charts of individual behavior patterns. However, success with self-appraisal blanks, even as with teaching itself, depends to a large extent upon enlisting the coöperation of the learner. A measure of the presence of this coöperation and truly objective self-evaluation was determined by a comparison between the scores represented in the qualitative inventory (Part I) and those recorded on month-long reading diaries kept previously on similar items by 240 twelfth-grade students. Tetrachoric correlations calculated between diary records and inventory responses (made one month later) showed a mean of .826. Total qualitative inventory scores and diaries, scored similarly, showed a product-moment coefficient of correlation of .848 between the life situation and the inventory responses. Of a total of 9,600 inventory responses, 7304 were in exact agreement with the reading diaries (taking O = 4 times weekly, S = 1, 2, or 3 times weekly, N = 0 times weekly). The under responses exceeded the over responses by 1204 to 1086, indicating chance errors free from self-exaggeration and insufficient in magnitude to vitiate the results.

GRADE NORMS

Tables IX and X give percentile norms in reading quality and quantity based upon administrations to 4291 students from six high schools and samplings from grades 13, 14, and 17 (graduate students).

[29] Betzner, Jean, and Lyman, R. L. *op. cit.*, p. 185.

[30] Gray, William S., and Leary, Bernice. *op. cit.*, p. 115.

TABLE IX

PERCENTILE NORMS
QUALITY OF READING EXPERIENCES

Grades	9	10	11	12	13	14	17
Students	1055	1084	1050	1102	187	128	84
95 %tile	83	98	104	119	108	154	159
90	54	68	76	85	93	114	134
80	22	32	43	55	63	76	109
75	11	18	30	41	51	67	100
70	− 20	7	2	29	39	57	92
60	− 22	− 4	− 7	9	20	35	77
50	−40±1.84	−31±1.84	−30±2.14	−12±1.92	7±5	20±5.8	63±5
40	− 55	− 47	− 49	−32	−11	0	48
30	− 74	− 68	− 71	−51	−33	−29	33
25	− 85	− 79	− 81	− 61	−44	−38	23
20	− 97	− 90	− 91	− 71	−58	−50	17
10	−122	−117	−114	−97	−81	−81	−13

TABLE X

PERCENTILE NORMS
QUANTITY OF READING EXPERIENCES

Grades	9	10	11	12	13	14
Students	1055	1084	1050	1102	187	128
95 %tile	59	59	62	62	60	60
90	51	50	52	53	51	53
80	39	37	40	41	42	44
75	34	32	34	35	39	40
70	30	28	29	29	35	35
60	22	19	19	23	31	26
50	14±.86	11±.91	11±.98	17±.92	23±1.55	20±2.15
40	4	1	1	2	18	14
30	− 4	−10	−10	− 9	10	6
25	−11	−16	−17	−15	5	1
20	−18	−22	−22	−31	− 5	− 5
10	−34	−39	−33	−39	−18	−18

SUMMARY AND CONCLUSIONS

1. Two inventories, designed to appraise the qualitative and quantitative factors of reading experiences, are presented. The reliability of each inventory is sufficiently high for individual diagnostic use. Significant validities between known-to-be-different groups are established.

2. The differences between four year levels indicate highly significant and coincident gains in the quality of reading, literary acquaintance, and in the skills of reading mechanics.

3. While the experimental groups showed small gains between grades nine and twelve in the quantity of reading, results, computed with over

1000 students at each level for grades 9, 10, 11, and 12, indicate small differences in favor of ninth graders (Md. = 14), dropping off slightly in grades 10 and 11 (Md. = 11) and increasing in grade 12 (Md. = 13). Likewise, the sampling of college freshmen (187) showed slightly greater reading activity (Md. = 23) than the college sophomores (12. Md. = 20). This is in accord with the findings of Eberhardt.[31] "The total amount of book reading, hence, decreased rather consistently (i. e. Grades 7, 8, 9, 10, 11, 12). The quality of the books was, at the same time, growing better."

4. Coincident growth toward chronological maturity and in the quality of reading (as defined by the combined judgment of 124 individuals) justifies the similarity of the expressions "quality of reading" and "levels of maturity of reading."

5. A positive correlation of .43 between the qualitative and quantitative factors of reading experiences is in accord with previous findings reported in educational literature.

6. A plateau in the growth in the quality of reading apparently exists, in the groups studied, between the tenth and eleventh grades, a transition period from juvenile to the beginning of mature performances.

7. The consideration of individual differences in the teaching of literature requires the diagnostic appraisal of individual backgrounds in qualitative and quantitative terms. The analysis of the total reading situation provided in the inventories is directed toward this end.

8. Stages of improvement in the quality of reading are suggested in the ranked categories.

9. An opportunity is provided for an awakening of individual interests and needs by making the student aware of his relative position among his fellows.

10. Superior techniques of instruction have resulted from the measurement of achievement both in reading skills and in the presentation of literary knowledge. Similar appraisal of stages of development in the quality and quantity of reading should produce insights into improved procedures for developing reading power.

11. While the evaluation of the quality and quantity of reading by individual case studies is possible, group appraisal of these factors possesses the increased facility noted in group intelligence and achievement testing.

[31] Eberhardt, Wilfred. *op. cit.*, p. 267.

PRINCIPLES OF ADJUSTMENT IN MATHEMATICS

J. T. JOHNSON
Chicago Teachers College

Editor's note: Considerable progress has been made in recent years in the development of newer and more economical methods of learning and teaching arithmetic. The author offers a method of adjustment applicable to many different sorts of arithmetical processes.

THIS topic was discussed in a section which was originally to have been included in the writer's doctor's dissertation on "The Relative Merits of Methods in Subtraction," published in June, 1938, but for a certain reason was deleted.

In that dissertation it was shown that the equal additions method of subtraction was quite superior to the familiar method of decomposition, better known as borrowing. Subsequent discussions with teachers as to the facility in teaching this method and an article by W. A. Brownell[1] on the desirability of employing this method eventually if not initially, together with requests from several persons that this discussion be published, has led the writer to comply with this request.

THE SIGNIFICANCE OF THE PRINCIPLE OF EQUAL ADDITIONS IN SUBTRACTION FOR OTHER PROCEDURES IN MATHEMATICS WHERE ADJUSTMENTS ARE NECESSARY

The principle of equal additions in subtraction conforms with several other procedures in mathematics in situations where adjustments are necessary. The following are familiar situations:

Division of decimals
Reduction of fractions to lower terms
Reduction of fractions to higher terms
Reduction of complex fractions
Solving equations:
- by equal additions
- by equal subtractions
- by equal multiplications
- by equal divisions

Simplification of surds

[1] Brownell, W. A. "Two Kinds of Learning in Arithmetic," *Journal of Educational Research*, XXXI (May, 1938), pp. 656-664.

Let us examine each one of these in turn for the principle of adjustment used.

(1) In division of decimals, the simplest case, the case in which the divisor is a whole number, as in the example below needs no adjustment.

$$4\overline{)\,.84}\quad .21$$

There are as many decimal places in the quotient as there are in the dividend and the decimal point in the quotient is placed directly over the decimal point in the dividend. In the next case of greater difficulty there is a decimal in the divisor, as in the example, $.4\overline{)\,.84}$. By a simple adjustment this case is resolved into the first simple case, for by multiplying the dividend and the divisor each by ten the example is changed to $4\overline{)8.4}\quad 2.1$. In working an example of still greater difficulty such as $.04\overline{)1.2}$, this principle of equal multiplications, as it may be called, is used and the divisor and the dividend are each multiplied by 100 making $4\overline{)120}$ which is again simple because the divisor is a whole number.

(2) In reduction of fractions to lowest terms a principle of equal divisions is applied to the numerator and the denominator of the fraction, as in $\frac{6}{8} = \frac{3}{4}$.

(3) In reduction of fractions to higher terms the principle of equal multiplications is applied to both terms, as in $\frac{1}{2} = \frac{2}{4}$.

(4) In reducing a complex fraction such as $\frac{2\frac{1}{2}}{3\frac{3}{4}}$ the principle of equal multiplications is used, the multiplier depending upon the denominators of the fractions. In the example above, 4 is used, giving $\frac{10}{15}$ or $\frac{2}{3}$.

(5) In solving an algebraic equation, such as $x - 3 = 5$, the principle of equal additions is used in adding 3 to both sides of the equation to get $x = 8$.

(6) In solving the equation $x + 4 = 10$, the principles of equal subtractions is used to get the solution, $x = 6$.

(7) In solving $x/3 = 4$, the principle of equal multiplications is used in arriving at $x = 12$.

(8) In solving $6x = 18$, the principle of equal divisions is used in getting $x = 3$.

(9) In simplification of surds such as $\sqrt{\frac{2}{3}}$, the principle of equal multiplications is applied to both terms of the fractions so as to make the denominator a perfect square, as $\sqrt{\frac{2}{3}} = \sqrt{\frac{6}{9}} = \frac{1}{3}\sqrt{6}$.

(10) Again in simplifying $\frac{\sqrt{5}}{\sqrt{3}-\sqrt{2}}$ we multiply both terms by the conjugate, $\sqrt{3}+\sqrt{2}$, to get $\sqrt{15}-\sqrt{10}$.

Other illustrations from higher mathematics could be added but this will suffice to show how general is the use of this adjusting principle in various situations in mathematics.

This principle of adjustment, as it may be termed, is called into use when a difficult situation arises and a simpler, already known procedure is looked for in order to effect a solution.

Teachers hesitant to use or teach the equal additions method in whole-number subtraction may know, therefore, that they are working in harmony with a principle which is quite common in the field of mathematics. In fact, the well known postulate of geometry, "if equals are added to unequals, the results are unequal in the same order," would, by the addition of five more words, become the principle of equal additions in subtraction; it would then be stated thus: If equals are added to unequals, the results are unequal in the same order *and by the same amount.*

Another part of this section dealt with the subtraction of mixed numbers and denominate numbers where adjustments were necessary. These two phases of subtraction were considered at length in the historical section of the dissertation. They should by all means be considered in a study of subtraction as every school child has to deal with them.

In this connection the *Twenty-Ninth Yearbook of the National Society for the Study of Education* says this:

"Such investigations (referring to investigations on subtraction of whole numbers) should include pupil performance in subtraction of fractions, mixed numbers, and compound denominate numbers, and all types of numbers in problem situations, as well as abstract whole numbers to which experimentation has so far been limited. It is total superiority, not superiority in but one phase, that needs to be known."[2]

The equal additions principle of adjustment can very readily be applied to mixed number and denominate number subtraction.

Let us examine the simple case of mixed number subtraction in which the mixed number occurs in the minuend as in the example (1) at left.

(1) $12\frac{2}{3}$ — 7 = $5\frac{2}{3}$

The subtraction in this case is very simple, consisting in merely bringing down the $\frac{2}{3}$ and subtracting 7 from 12 leaving $5\frac{2}{3}$.

[2] Ruch, G. M., and Mead, C. D. "A Review of Experiments on Subtraction," *The Twenty-Ninth Yearbook of The National Society for the Study of Education.* (1930), p. 678.

The next step of difficulty in mixed number subtraction is an example as (2) at the left where the mixed number occurs only in the subtrahend. How can this be made as easy as example (1)? The condition that makes the first example easy is that the subtrahend is a whole number. We seek then to make an adjustment that will make the subtrahend a whole number in example (2). The principle of equal additions will effect the adjustment for us if we add ¼ to each of the minuend and subtrahend. This will make the subtrahend a whole number. The example will then appear as (3) at the left and will be just as simple as example (1) above.

(2) $12 - 7\frac{3}{4}$

(3) $12\frac{1}{4} - 8 = 4\frac{1}{4}$

The next case of mixed number subtraction is that in which the subtrahend fraction is larger than the minuend fraction as in example (4) at left. The principle of equal additions can again be used to advantage here in making the subtrahend a whole number by adding ¼ to both terms, making example (5). This is identical in kind with example (1) above which was very simple.

(4) $12\frac{1}{2} - 7\frac{3}{4}$

(5) $12\frac{3}{4} - 8 = 4\frac{3}{4}$

Thus the principle of equal additions can be used in both cases of subtraction of mixed numbers where adjustments are necessary. The most common method in mixed number subtraction in this country today is the old borrowing method. It is usually explained as follows with the example (6) at left. One whole is taken (borrowed) from the 12, then changed to ¼, then added to the ¾ making ⁴⁄₄, then the $7\frac{3}{4}$ is taken from the $11\frac{4}{4}$.

(6) $12\frac{1}{2} = 12\frac{2}{4} = 11\frac{4}{4}$
$7\frac{3}{4} = 7\frac{3}{4} = 7\frac{3}{4}$
$4\frac{3}{4}$

Let us examine a case of subtraction in denominate numbers where an adjustment is necessary. To find the difference between two dates, as is required in finding time in interest-bearing notes, the dates are set down as shown here in example (1) at left. Since 24 cannot be subtracted from 22 we make an adjustment by adding 6 days to both terms effecting the mental change shown below in example (2). The subtraction here of course is easy, as it was in the adjusted mixed number example.

(1) 1934 — 12 — 22
1921 — 6 — 24

(2) 1934 — 12 — 28
1921 — 7 — 0
13 — 5 — 28

The procedure here may seem strange to the reader, as it does to the writer, since most people have been brought up on the borrowing method in denominate number subtraction. To the student who has had sub-

traction in whole and mixed numbers explained by the principle of equal additions, however, it should not be difficult to use a similar method in denominate numbers.

The above discussion has shown how the equal additions principle of adjustment can be applied to both mixed number and denominate number subtraction. That it has been applied is evidenced by the examination of texts in this country and in Europe. It was used extensively in England and is known there as the complementary method. As far as the writer is aware it is used in this country in only one text.[3] It is not called by the name of complementary by the authors, however. To prove whether or not the equal additions method of adjustment in mixed numbers or denominate number subtraction is more efficient than the borrowing method a differential testing experiment should be set up. This should be tried out on a random sampling of individuals from each method. If sufficient numbers could not be found who were naturally using the complementary method a group could be taught it in a short time. The results from the same set of differential tests could then be compared to determine the relative intrinsic efficiency of the two methods of subtraction in mixed numbers or in denominate numbers.

[3] Stone, J. C., and Mills, C. N. *Unit Mastery Arithmetic, Intermediate.* (Chicago: Benj. H. Sanborn & Co., 1932), pp. 277-439.

ON ART APPRECIATION OF CHILDREN: IV. COMPARATIVE STUDY OF WHITE AND NEGRO CHILDREN, 13 TO 15 YEARS OLD

BETTY LARK-HOROVITZ
Educational Department, The Cleveland Museum of Art[1]

Editor's note: This is the fourth of a series of interesting reports by the author on the art preferences of school children. The present study offers data on preferences of white and negro children from 13 to 15 years old.

INTRODUCTION

THREE previous art appreciation studies have investigated children's subject preference[2] in contemplating pictures, their portrait preference,[3] their preferences when confronted with a variety of textiles[4] and the reasons which led to their preferences in all three situations. These studies extended over the age levels 6 to 15.

The present study makes use of the results of the three studies mentioned, in order to compare groups of Negro children 13 to 15 years old with white children of the same age levels.

THE PROBLEM

Besides our interest in the actual choice of various pictures, portraits and textiles by Negro children as compared with white children, our main purpose was the comparison of the spontaneous responses of both groups as well as their reactions to definite questions.

THE EXPERIMENT

The three studies in question were carried out at The Cleveland Museum of Art and the preliminary selections were made from a great variety of large-sized reproductions and facsimiles from the Museum library and department of education by white children who attended the Mu-

[1] This work was carried out under a grant of the General Education Board of New York, to the Educational Department of The Cleveland Museum of Art. I am greatly indebted to Dr. Thomas Munro, Curator of Education of The Cleveland Museum of Art, for his interest and valuable discussions.

[2] Lark-Horovitz, Betty. "On Art Appreciation of Children: I. Preference of Picture Subjects in General," *Journal of Educational Research*, XXXI (October, 1937), pp. 118-137.

[3] Lark-Horovitz, Betty. "On Art Appreciation of Children: II. Portrait Preference Study," *Journal of Educational Research*, XXXI (April, 1938), pp. 572-58[illegible]

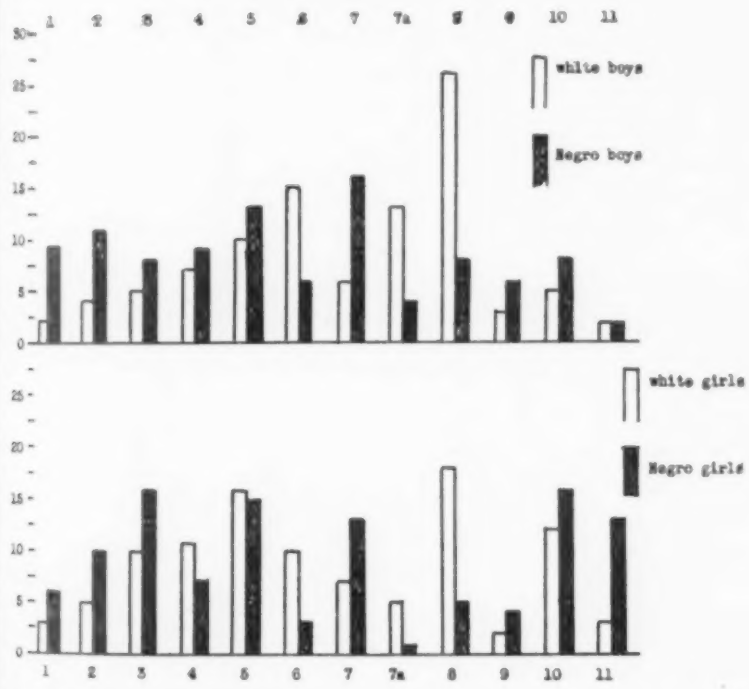
[4] Lark-Horovitz, Betty. "On Art Appreciation of Children: III. Textile Pattern Preference Study," *Journal of Educational Research*, XXXIII (September, 193[illegible] pp. 7-35.

eum's Saturday classes. The Negro children did not participate in the preliminary selection but were exposed to the exhibits at their schools.[5]

The procedure was the same for both groups. Pictures and textiles were so placed that they were equally well visible and shown to small groups who were asked to make a first, second, third, or further choice, if they so desired, or none, if nothing in the exhibit appealed to them. The children were then asked to answer the questionnaire and to take all the time they needed.

GRAPH I

SUBJECT PREFERENCE CHOICES



[5] I wish to thank Mr. F. S. McCormick, Principal of Kennard Junior High School, Cleveland, Ohio, and Mr. Charles E. Bryenton, Principal of Rawlings Junior High School, Cleveland, Ohio, for their help and coöperation. My special thanks are due to Mr. Price Chamberlin, art teacher at both of these schools at the time when these experiments were carried out, for his active coöperation; also to Miss Dorothea Doig and Mrs. Esther Marshall Sills for their help while carrying out the experiments.

RESULTS

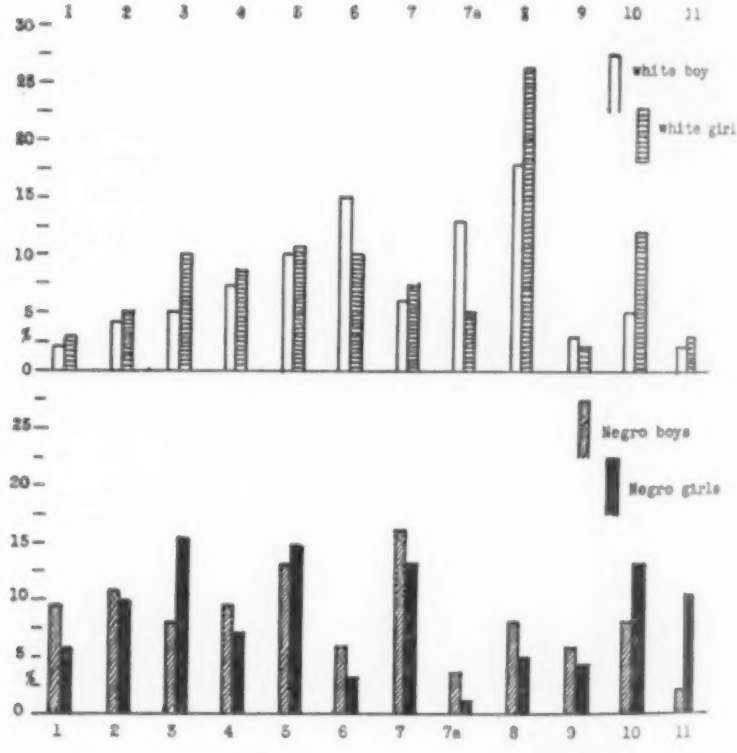
A. Preference of Picture Subjects in General

In this investigation the number of children was 62 white boys, 64 white girls, 46 Negro boys and 58 Negro girls. For the picture list and questionnaire we refer to the previous study on this subject.[6]

Comparison of picture choices between white and Negro children shows the differences in choices. (See Graphs I and IA)

GRAPH IA

SUBJECT PREFERENCE CHOICES



The choices of white children especially of the boys, are more definite than those of the Negro children and are centered on fewer pictures. (Boys, Pict. 6, 7a, 8 . . . 55 percent of all choices; Girls, Pict. 4, 5, 8,

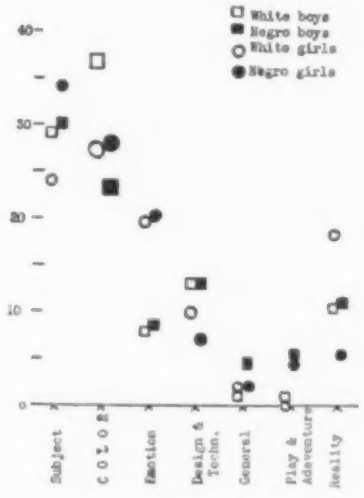
[6] See Subject Preference List, *Journal of Educational Research*, XXXI (October, 1937), p. 120.

10 . . . 58 percent of all choices). The choices of both Negro boys and girls are more scattered. No one or two pictures are definitely preferred as they are by white children. Pictures 2 and 7, both pictures with the accent on the emotional and both little valued by white children at any age level, get more than twice as much attention by Negroes. Picture 8, the favorite picture of the white children through all age levels, meets with very little interest on the part of the Negro children. Picture 4 receives about equal attention from both groups.

The reasons given in the answers to Question 1 (Why do you like No..... best? Explain as best you can) were classified according to the variety of responses as was done in the previous studies: Color,[C] (colors, light and shade), Emotion,[Em] (the reaction to the picture is emotional or associated with imaginary situations), Design and technique,[D] (arrangement of picture and execution), General,[G] (the comments are not specific, such as "nice," "pretty" etc.), Play or adventure,[P] (the content of the picture is associated with play activities or adventure stories), Reality,[R] (the picture looks "real," "lifelike"), Subject,[S] (the objects represented in the picture, the situation in it, or the story it implies is the most attractive part).

GRAPH II

CLASSIFIED ANSWERS TO QUESTION 1
(Subject Preference)



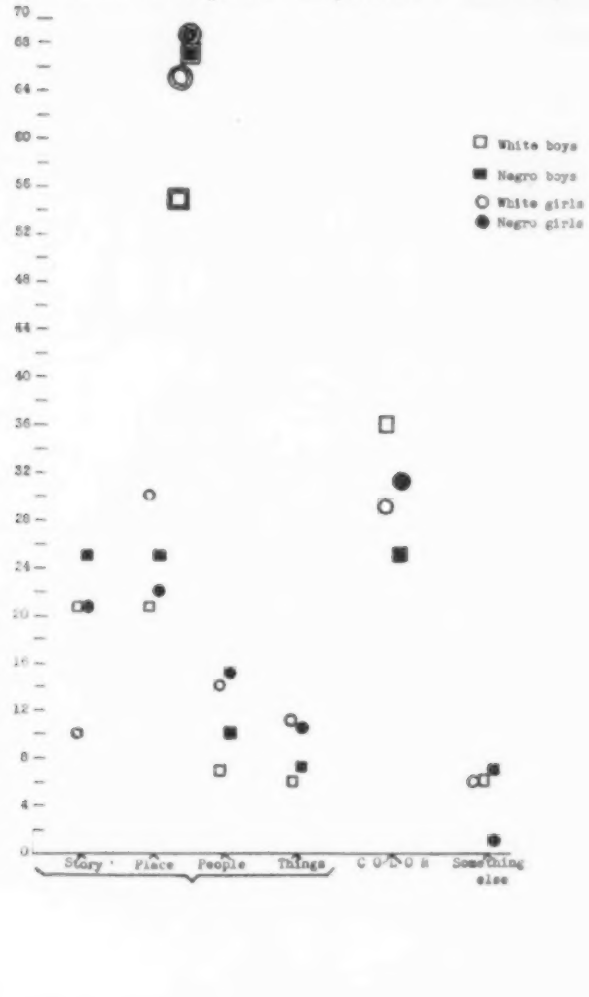
Comparing free responses, we find that Negro boys give color only two-thirds as many times as a reason for preference as do white boys, while the reaction of white and Negro girls is the same. In all other responses white and Negro boys and white and Negro girls react alike or nearly so.

Question 2 (Do you like this picture because it makes you think of a story, of a place, of people, of things, of the colors, or do you like it because of something else?) is, like all the following questions, a very

GRAPH III

SUBJECT MATTER (CONTENT)

ANSWERS TO QUESTION 2 (SUBJECT PREFERENCE)



definite one and implies suggestions which are not contained in the first question. The answers to this question in regard to color are the same as the answers to Question 1, that is, white boys seem more interested in color than Negro boys, white and Negro girls show the same amount of interest. In both groups, interest in the subject (be it story content, the place which is depicted, the people or things that are represented) is apparently twice as large as the interests in color. Because of the answers of some individual to two or more of those items simultaneously the significance of these percentages cannot be taken literally.

In Question 3: (Would you like to hang this picture in your house?) the answers of both groups are nearly alike; also in Question 4: (If you were an artist would you paint this kind of picture?)

The answers to Question 5: (Is there anything in this picture that you would like to be different?) show a sharp difference between white and Negro children and a difference between boys and girls. (Table I)

TABLE I

RACE DIFFERENCES IN PICTURE PREFERENCES

White		Negro	
Boys	Girls	Boys	Girls
41%	36%	13%	25%

B. Portrait Preference Study

The number of children who participated in the portrait preference experiment was: 81 white boys, 81 white girls, 44 Negro boys and 54 Negro girls.

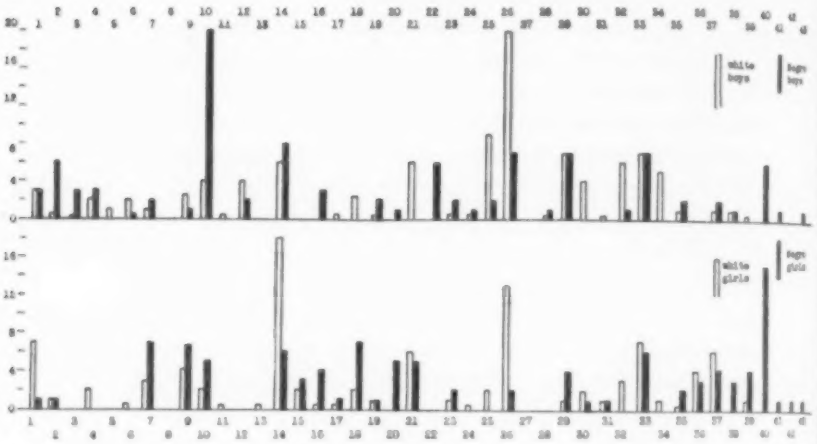
Comparison of picture choices shows entirely different choices of favorite pictures by white and Negro children as well as differences between boys and girls.

Our previous portrait study,[7] carried out with 6 to 15 year old children, made use of two portrait exhibits which resulted from preliminary choices: an exhibit for the 6-10 year olds and an exhibit for the 11-15 year olds. Both exhibits contain 21 pictures in common, numbered 1 to 21. Pictures 22 and 43 are different in both exhibits.[8] The Negro boys favor the same picture, No. 10 (K. W. Leighton, Sun-dance bustle) as the white boys of a younger group. Their other choices are scattered over 25 pictures, a scattering similar to the one of the younger white boys (8-10).

[7] *Ibid.*, April, 1938.
[8] *Ibid.*, p. 580.

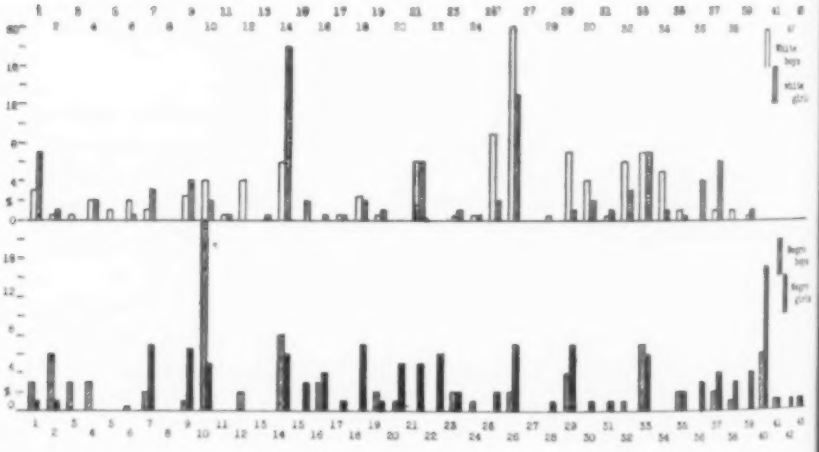
GRAPH IV

PORTRAIT PREFERENCE CHOICES



GRAPH IVA

PORTRAIT PREFERENCE CHOICES



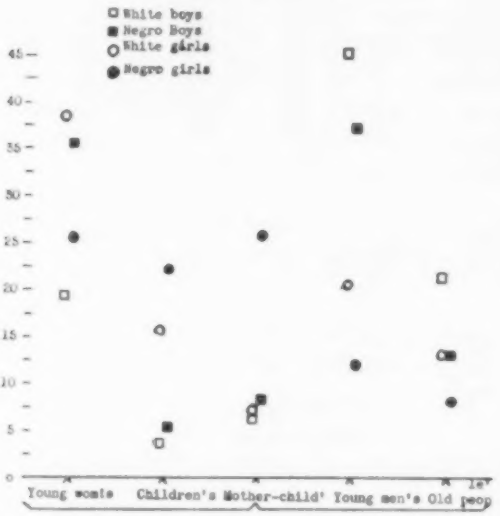
The Negro girls have only one definite picture choice, Picture No. 40 (L. A. Swinnerton, Little mother), which differs from that of the white girls. While the white girls chose Picture No. 14 (George Buehner, Erica), the en-face portrait of a young girl and No. 26 (A. Graff, Self-portrait), a charcoal drawing of a man, also a favorite of the white boys, the Negro

girls chose a mother-child group. Their other choices were scattered over 27 pictures. The votes for some of these reached 7 percent, and with the exception of one were given to pictures of young women or children.

Graph V shows the distribution of picture votes according to the type of portrayed person.

GRAPH V

CHOICE OF PORTRAITS



It is noticeable that white boys are most interested in young men's portraits, Negro boys equally in young men's and young women's portraits, white girls in young women's pictures and Negro girls equally in young women's and mother-child portraits. White boys show the highest interest in old people's portraits and the lowest in children's and mother-child ones. Negro girls show the least interest in young men and old people.

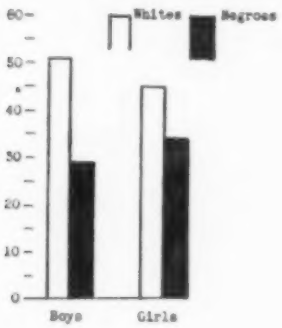
The distribution in choice of colored and uncolored pictures shows that white boys chose nearly twice as many uncolored pictures as Negro boys, white girls about 25 percent more than Negro girls.

The choice of uncolored pictures by Negro boys and girls corresponds to the choices of the 10-11 year old group of white children.[9] The white boys' favorite picture is uncolored; the Negro boys' is colored; the

[9] *Ibid.*, (April, 1938), p. 584.

GRAPH VI

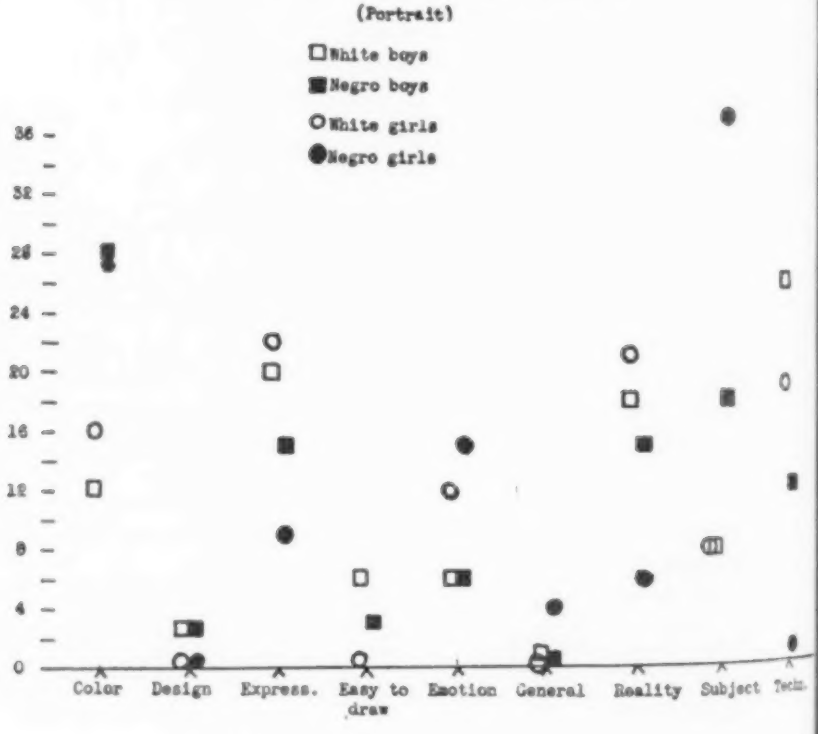
CHOICE OF UNCOLORED PICTURES
(Portraits)



GRAPH VII

CLASSIFIED ANSWERS TO QUESTION 1

(Portrait)



white girls' second choice is uncolored; and the Negro girls' choice is colored. Photographs of sculptures reach the same amount of votes with all children, white and Negro.

The answers to Question 1 (Why do you like No..... best? Explain as well as you can) which calls for a spontaneous write-up, show the distribution in regard to reasons advanced for their first choice. (See Graph VII)

Negroes, both boys and girls, mention color nearly twice as often as the white children, are less interested in facial expression and reality of the portrait but far more interested in the subject than white children, that is, the type of person represented, his surroundings, attributes, etc. Technique, a most interesting factor for white children of these age levels, seems of small interest to Negro children. As to emotional response, both white and Negro boys show a much slighter reaction than both groups of girls.

The answers to Question 2 (Have you seen this portrait before?) are negligible. Evidently the pictures on exhibit are equally unfamilar to Negro and white children.

Answers to Question 3a (Do you like this portrait best because of the expression of the face? Why?) show similar returns for both groups. (Table II)

TABLE II

RACE DIFFERENCES IN PORTRAIT PREFERENCES: FACIAL EXPRESSION

	White		Negro	
	Boys	Girls	Boys	Girls
Facial expression in general	72%	67%	77%	74%
Description of the kind of facial expression	44%	57%	59%	56%
Pleasant expression	9%	7%	5%	11%

The reaction to Question 3b (Do you like this portrait best because it reminds you of someone you know? (Whom?) shows a great difference between the two groups. (Table III)

TABLE III

RACE DIFFERENCES IN PORTRAIT PREFERENCES: ACQUAINTANCESHIP

	White		Negro	
	Boys	Girls	Boys	Girls
	17%	19%	36%	50%
Whom?	17%	16%	32%	46%

Both parts of this question receive twice as many affirmative answers from Negro boys as from white boys and three times as many from Negro girls as from white girls.

Question 3e (Do you like this portrait best because this person is young?) is answered with "yes" by twice as many Negro boys as white boys and by more white girls than Negro girls. Yet choice of picture according to youth of the portrayed person seems especially important to Negro girls. (Table IV)

TABLE IV

RACE DIFFERENCES IN PORTRAIT PREFERENCES: YOUTH

White		Negro	
Boys	Girls	Boys	Girls
15%	58%	32%	43%

The importance of attributes, Question 3e and 3f (Do you like this portrait best because of the costume, suit, dress? Because of the hat, hairdress, beard?) is slightly greater for Negro than for white children. (Table V)

TABLE V

RACE DIFFERENCES IN PORTRAIT PREFERENCES: DRESS

White		Negro	
Boys	Girls	Boys	Girls
65%	49%	89%	65%

As to the answers to Question 3d (Do you like this portrait best because of the colors?) Negro and white children answer in the same proportion as is to be expected from their choice of colored pictures. Sixty-three percent of the Negro children, whose average choice of colored pictures is 69 percent, answer with Yes, and so do 45 percent of the white children whose average choice of colored pictures is 50 percent.

According to the Answers to Question 4: Do you like statues better than paintings? Negro children show a greater preference for sculpture than do white children. Yet the results of the actual choice are the same for both.

Questions 5 and 6 (Would you like to hang this portrait in your house? If you were an artist, would you like to paint a portrait like this? Would you like to paint any portrait?) are answered with more restraint by white children; however, the difference is small.

The answers to Question 7 (Is there anything in this portrait which

you would like to have different?) show sharp differences between white and Negro children. (Table VI)

TABLE VI

RACE DIFFERENCES IN PORTRAIT PREFERENCES: DISLIKES

White		Negro	
Boys	Girls	Boys	Girls
25%	27%	7%	13%

C. Textile Pattern Preference Study

The number of children in this study was 106 white boys, 114 white girls, 71 Negro boys and 97 Negro girls.

Comparison of choices of textile patterns between white and Negro children shows that the preferred patterns of the white children are also the ones preferred by Negro children.[10]

The proportion of votes on the patterns preferred varies in groups. The patterns preferred by boys (Nos. 7, 8, 10, 32, 34)[11] show an accumulation of 59 percent of white boys' votes as compared to 56 percent of Negro boys'. In this group of patterns Nos. 7 and 10 gather 34 percent of the Negro boys' votes against 22 percent of the white boys' votes, while Nos. 32 and 34 combine 15 percent Negro votes against 25 percent white votes.

The girls favor many of the boys' favorites (Nos. 7, 8, 19, 32, and 34),[12] but are not interested in No. 10. They also prefer to some extent

[10] See Textile Pattern List, *Journal of Educational Research*, XXXIII (September, 1939), p. 9.

[11] 7. Brocaded silk; grey ground with black elephant heads holding in their curled up trunks red stemmed silver leafed branches. Regular horizontal alternating arrangement. French, Made by Biancini Ferier.

8. Rayon and cotton; disks overlapping each other, partly dotted, rectangles and squares in oranges and browns arranged in geometrical pattern on dark beige ground. French.

10. Silk print; Japanese, diagonal straight line geometric pattern, dark green and brown plaid, spotted with pieces of Japanese armor. Natural pongee and dark green ground. Motifs, browns, blues and whites. Modern.

32. White linen; red print, alternating motifs of city places, printers with their press, weavers, etc. Clouzot.

34. Design for Navajo weaving, dark red ground, diamond shaped continuous pattern, diamond border of white and black steps. Insertions, green, black, red crosses. Connely, Pl. 12.

[12] 19. Hand painted silk on lemon yellow ground; large flowers arabesqued in green, lavender and pink. Chinese XVIII century. Plate 14, Baker.

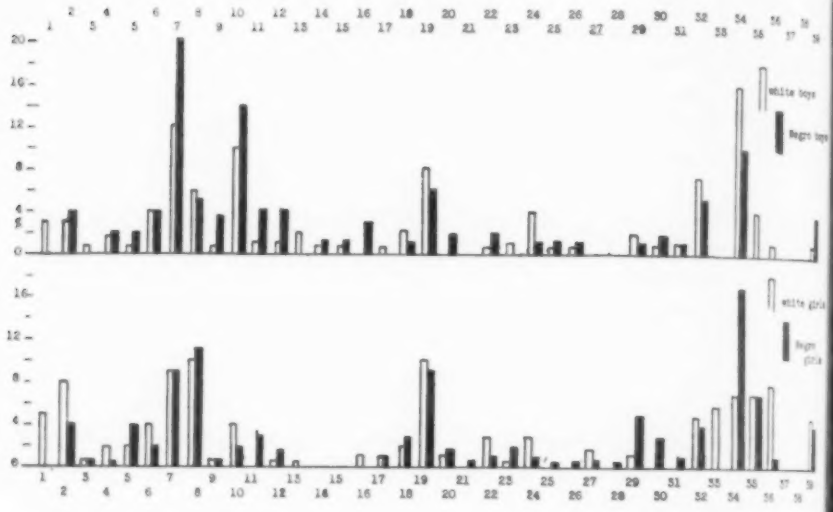
2. Lavender-blue ground with grey, topped with white lines, spotted with dark grey, abstraction of constellation in rotation. Silk print. "Trade Mark" designed by W. T. Teague. Marshall Field. American.

35. White linen; large flowered arabesques in various colors. Clouzot, Jouy, 1760-1820. Pl. 11.

36. White linen, black flowered arabesques, delicate pattern. Clouzot, Pl. 8.

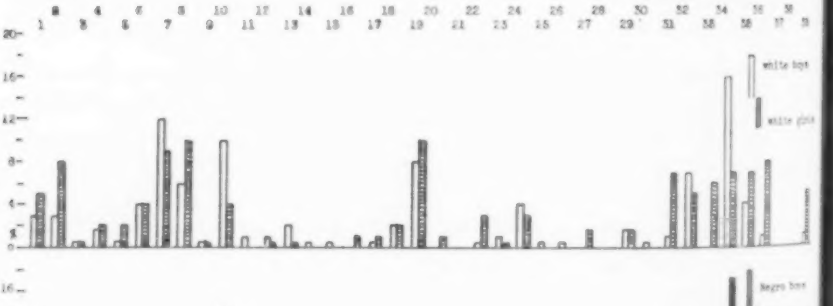
GRAPH VIII

TEXTILE PATTERN PREFERENCE, CHOICES



GRAPH VIIIA

TEXTILE PATTERN PREFERENCE, CHOICES



Nos. 2, 35, and 36 (white girls only),[12] of which 35 and 36 are all-flower patterns and which do not get the attention of the boys. Nos. 7, 8, 19

TABLE VII

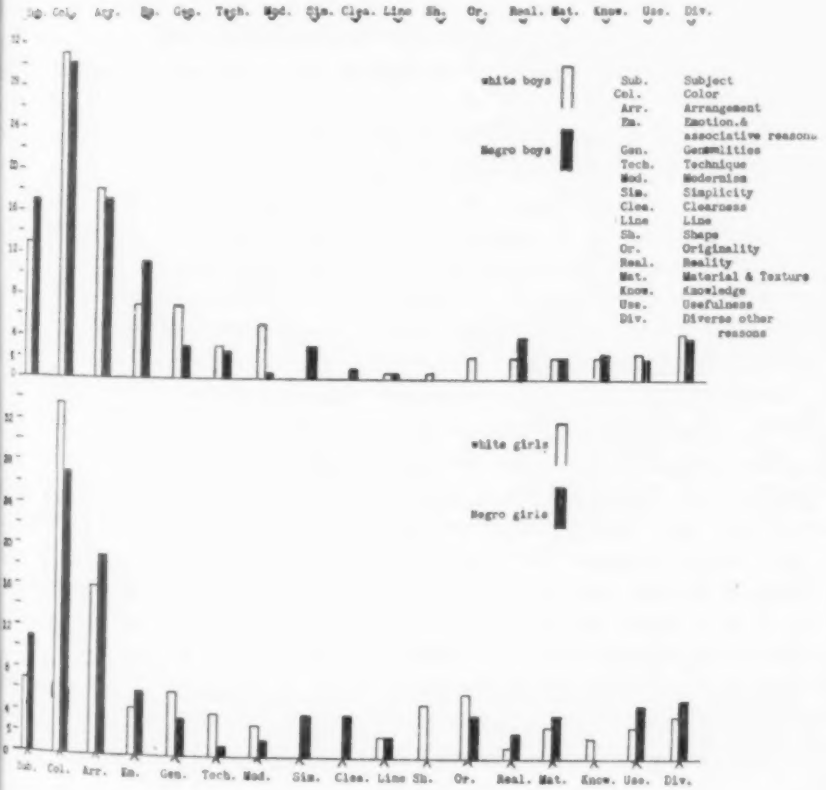
RACE PREFERENCES: PATTERN DESIGNS

	White		Negro	
	Boys	Girls	Boys	Girls
	33⅓%	40½%	24%	37½%
Included in above % is Pattern No. 34 with.....	16%	7%	10%	17%

The answers to Question 1 are classified according to content and show the following distribution:

GRAPH IX

CLASSIFIED ANSWERS TO QUESTION 1 OF TEXTILE PATTERN STUDY



and 32 are equally preferred by both white and Negro girls. No. 34 is the pattern most highly valued by Negro girls. It draws only 7 percent of the white girls' votes and is a favorite of 10 year old white girls only. The white girls' preferences are fairly evenly divided (6 to 8 percent) between all preferred patterns. The group of patterns preferred by white girls draws 70 percent of their votes, that of the Negro girls 59 percent. The rest of the votes, of both boys and girls, whites and Negroes, is entirely scattered.

Of the patterns 28 percent are of a geometric or abstract character, the other 72 percent being representational; that is, they contain motifs and arrangements made of flowers, animals, people or things. The votes for geometrical and abstract patterns are shown in Table VII.

Color, arrangement and subject, in the order mentioned, are the reasons most often given for the choice. Next come associative and emotional factors. Only white children mention the modern effect of a design and the shape of the pattern (4 percent and 2½ percent), while only Negro children mention simplicity and clearness (4 percent and 2½ percent).

Color is mentioned more often by white children than by Negro children; arrangement is mentioned equally often by both groups; and subject is mentioned more often by the Negro group and by the boys. All three make up 57 percent of the reasons given by white children and 60 percent of the reasons given by Negro children.

Eleven of the patterns on display, or 28 percent, were modern.[13] Only 4 percent of the white children mention modernism and less than 1 percent of the Negro children.

Answers to Question 2 (Do you like this pattern best, because it shows people, because it shows animals, because it shows flowers?) and to Question 3 (Do you like this pattern best because it is only a regular pattern of lines?) permit a comparison of preference for geometrical (or abstract) patterns and representational patterns. For both Negro and white children the preference for representational patterns is slightly greater than that for geometrical patterns according to answers to leading questions in the questionnaire. In the actual pattern choices the preference is smaller (considering the proportion in the exhibit). Differentiations of the representational patterns as to people, animals, flowers, are mainly sex differences. Boys are strongest for animals, girls

[13] *Journal of Educational Research*, XXXIII (September, 1939), p. 13.

for flowers. However, white boys prefer flowers slightly to animals. (Table VIII)

TABLE VIII

RACE PREFERENCES: PATTERN DESIGN CONTENT

	White		Negro	
	Boys	Girls	Boys	Girls
People	14%	12%	26%	5%
Animals	39%	22%	54%	37%
Flowers	47%	66%	20%	54%
Representational patterns	50%	50%	65%	62%
Geometrical patterns	24%	19%	18%	25%

Question 4 asks details about color preference. Partiality towards favorite colors contained in the pattern, multicolorism and color contrast occurs as frequently with whites as with Negroes, both girls and boys. The only perceptible difference shown is in the question of preference of brightness of colors to delicacy of colors. (Table IX) Whereas white and Negro boys have exactly the same percentage of answers for bright colors, Negro girls prefer bright colors twice as much as white girls, a percentage similar to that of white girls at younger age levels (age 10).

TABLE IX

RACE PREFERENCES OF COLOR

	White		Negro	
	Boys	Girls	Boys	Girls
Color in general	76%	67%	74%	79%
Bright colors	62%	59%	62%	80%
Many colors	31%	34%	33%	33%
Favorite colors	48%	34%	44%	39%
Contrasting colors	74%	78%	76%	84%

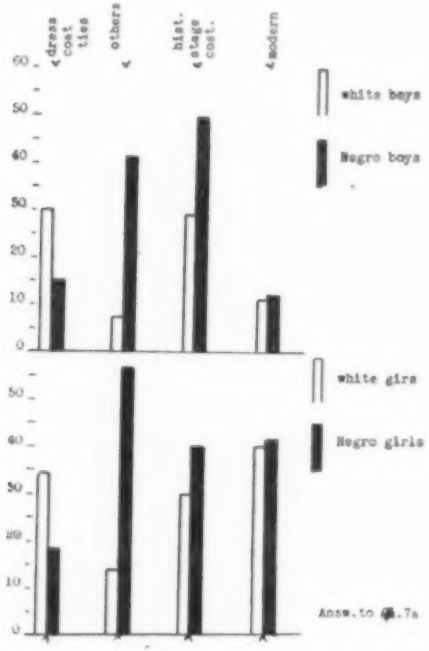
Interest in material and texture (Question 5, Do you like this pattern because of the material? and Question 6, Do you like it because of its texture?) seems to be about the same for both groups and sexes.

Answers to Question 7a (Do you like this pattern because you would like to use it for a dress, coat, tie, or other clothing? modern, historic costume, stage costume, others?) show a difference between whites and Negroes. Negroes seem less interested in the question of usability of the pat-

tern for dresses, ties, suits and coats than in "other uses," 49 percent as compared to 15 percent of white children. Their interest in the use of the displayed textiles for historical and stage costumes is also 50 percent greater than that of white children. In the question of modernism the difference is one of sex, the girls being three times as much for modern uses as the boys.

GRAPH X

USE OF CLOTHING



Answers to Question 7b (Do you like this pattern because you would like to use it for hangings?) and Question 8 (If you want to use this pattern in your house, would you use it in a modernistic room? in what kind of room?) show no sizeable difference, nor do answers to Question 9 (Would you like to design or weave a pattern like this one?).

Question 10 (Would you like to change anything in this pattern?) shows a noticeable difference in the answers of Whites and Negroes. Again Negroes are less inclined to want or suggest changes. (Table X)

TABLE X

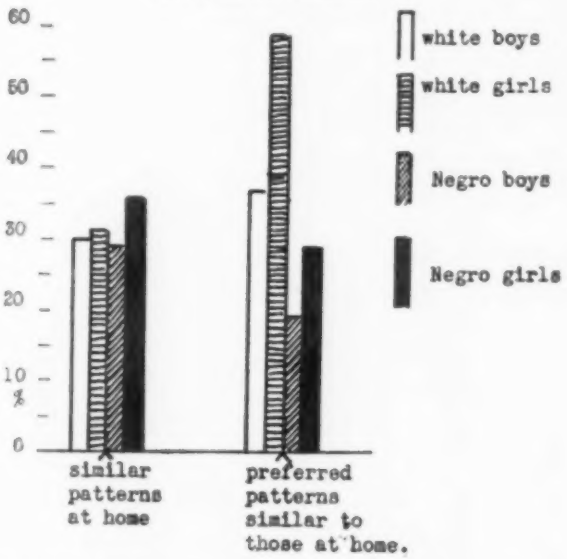
RACE PREFERENCES IN PATTERN CHANGES DESIRED

White		Negro	
Boys	Girls	Boys	Girls
20%	21%	9%	15%

The last question, 11 (Have you a pattern like any of these at home? Which one?), brings an unexpected return.

GRAPH XI

ANSWERS TO QUESTION 11



Whereas both whites and Negroes claim to have about the same number of patterns at home, similar to some of those on exhibit, only half the Negroes preferred patterns avowedly similar to a pattern at home.

Let us summarize the preferences, the reasons offered for them and other answers to questions common to all three studies insofar as they show dissimilarity between whites and Negroes, or dissimilarity between boys and girls.

1. Picture choices. Subject-preference picture choices show a much greater difference between Negroes and whites than between boys and girls.

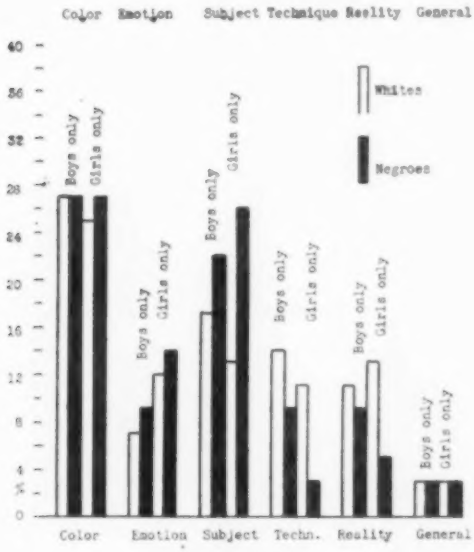
In the portrait choices Negroes differ from whites just as much as boys

differ from girls. Only on one portrait do white children agree, that is No. 26 to which the Negroes are indifferent.

In the Textile Pattern choices, Negroes and Whites display nearly

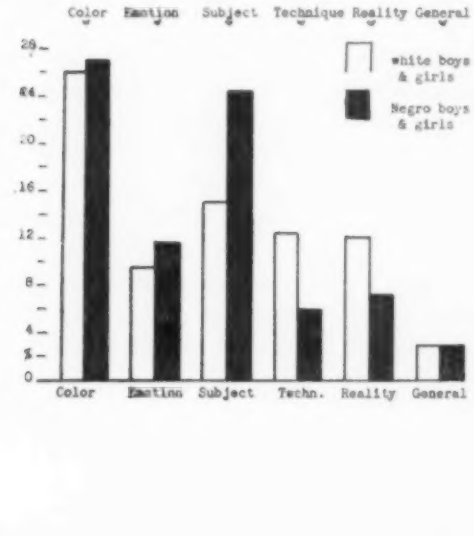
GRAPH XII

ANSWERS TO QUESTION 1 OF ALL THREE QUESTIONNAIRES
REASONS FOR PREFERENCE



GRAPH XIIA

REASONS FOR PREFERENCE (ANSWERS TO QUESTION 1)
THREE STUDIES COMBINED



the same preferences, and, with the exception of No. 34, where the percentages of votes of white boys and Negro girls is the same (white boys 16 percent, Negro girls 17 percent) girls and boys are rather close in their preferences.

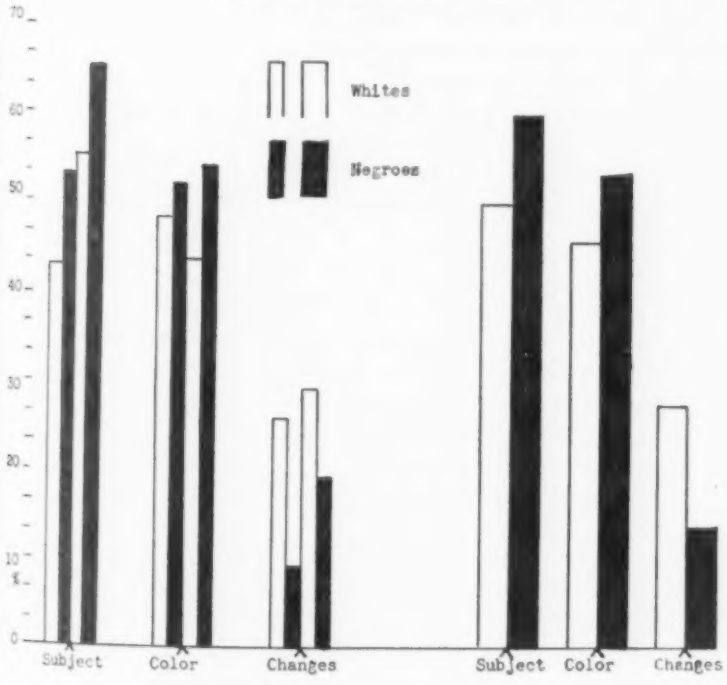
2. Preference reasons, as given in answers to Question 1. Among the categories of reasons for preference the most outstanding ones, common to all three studies, are color, subject, and emotional (associative) responses.

Combining the responses of all three studies in these three major categories and some minor ones, also common to all three studies, we find that only color carries the same weight for both Whites and Negroes and for both boys and girls.

The subject is far more important to Negroes than to whites, the Negroes' interest corresponding to that of younger age levels of white

GRAPH XIII

ANSWERS TO LEADING (SUGGESTIVE) QUESTIONS
COMMON TO ALL THREE STUDIES



children. Interest in technique is far greater in white children than in Negroes, as is also the importance of the reality of a picture or pattern.

The emotional or associative reaction is slightly greater with Negroes and distinctly greater with girls. In the textile pattern study there is a larger number of associative responses on the part of the Negro boys. As it is combined with all other emotional responses it increases the percentages of boys' emotional responses which otherwise would be much less. 3. Answers to leading (or suggestive) questions. Questions about subject matter (content), color, and changes in the picture are the only ones common to all three studies. Subject matter is slightly more important to Negroes than color. In both, subject and color, Negroes' interest is higher than that of whites. Negroes are much less inclined to change than whites.

INTERPRETATION OF RESULTS

Comparisons between the choices made by the group of white children and that of the Negro children shows absolute disagreement in subject preference, agreement as to the less important choices in portrait preference, and a general agreement as to the preference of the textile patterns. The difference in subject preference choices is not only obvious for the age levels 13 to 15 but also when compared to younger age levels of the group of whites.[14] The only point common to both groups is the dislike or lack of interest for the fruit still life No. 9 of the subject preference picture group.

The Negro groups, both boys and girls, are interested in pictures of the subject preference group which attract through their emotional associations: No. 7, with the visionary face of the girl and the haloed apparition of the saint,[15] No. 5, a landscape with mountains in sparkling light;[16] and No. 2, which is frequently interpreted as a religious picture.[17] Two other pictures of the subject preference group show a distinct preference by Negro girls and a mild preference by Negro boys: No. 3, a picture of children, and No. 10, a sunny interior with the breakfast table all laid. The comments on those two pictures and on a number of others

[14] See graphs II to XII, *Journal of Educational Research*, XXXI (October 1937), p. 122-124.

[15] D. H. (boy, Negro, 14): "... because the lady seems to be day dreaming of something she wished to be." J. W. (boy, 14): "... it shows the spirit of the knight and angels." M. B. (girl, 14): "... know it expresses sorrow or maybe her mind is picturing something way far away. You can tell she is poor."

[16] L. R. (boy, Negro, 15): "... because of beautiful trees and grass and the mountains and the sky, the roofs of the houses. It shows that the sun is shining."

[17] E. M. (girl, Negro, 15): "... because it reminds me of a Bible picture."

are of a sober and practical nature,[18] as well as those made on portraits and patterns. The Negroes' comments on some other pictures, as for instance No. 4 of the subject preference group, which is equally mildly preferred by both white and Negro groups show the same practical, matter-of-fact attitude.[19] It appears, therefore, that the interest which instigated the choices was prompted partly by emotional appeal and partly by a most practical outlook on everyday life. The white children, in contrast, show interest in nature and wild life and in a clear-cut type of landscape (the same No. 5, in which also Negro children were interested). Yet the white children show a certain romanticism in their choice of portraits in the form of hero- and ideal-worship. The facial expression and the attributes of the person are all important. The Negro girls do not share this attitude but distinctly show that their main interest is centered on mother-child groups (compare also Graph V), to which their favorite portrait belongs, a family subject of a type not represented in the subject preference picture group. The boys share this preference to some extent. The comments reveal that tenderness and gentleness of expression, the relation of mother and child, the simplicity of clothing, poverty of the people, are the qualities that influenced this choice, and that these motives were sustained by the simple surroundings which can easily be interpreted as a backyard with an appletree, something familiar to any of these children and within reach of their standard of living.[20]

[18] E. S. (girl, Negro, 16): "I like No. 3 best because it shows how happy children can be if they toy, that also shows that children in the olden days did not stay home because they had no shoes. . . ." K. P. (girl, 13), Picture 11: "It shows the beautiful interior and the setting of the table. It shows . . . everything is neatly arranged. T. B. (girl, 14), Picture 11: "It shows you have to be a good housewife and serve healthy breakfasts."

[19] J. J. (boy, Negro, 15): "Makes you think of our modern life." R. L. (girl, 15): "makes me think of Adam and Eve when the people did not wear clothes."

[20] A portrait study consisting of 4 portraits (a boy, a young girl, a middle-aged man and a family group) which had been made previously to the portrait study in question here, showed that very few boys chose the family group, but over 90 percent of the girls did so. The comments on this family picture (George de Forest Brush, A family group) leave no doubt that the relation of the mother to the children, her care for them, creates such an overwhelming interest. To quote some of the comments: ". . . because the picture shows that the mother thinks enough of her child to read her a bedtime story, because it shows how happy the family are . . . ," ". . . because it shows the mother love for the children and she likes to make the home pleasant for them by reading . . . ," ". . . because this mother is a very good mother she is taking time enough to read to her children . . . ," ". . . because it shows the happy life a mother can have with her children. . . ," ". . . The mother is learning the children something about the Bible . . . ," ". . . because the mother is teaching the child how to read her Sunday school lesson . . . ," ". . . because it looks like such a loving family . . . ," "because it seems like the mother is very true to her children . . . ," ". . . It shows how the mother is interested in her child and tries to bring her up by reading to her and making her understand."

The Negro boys' choice of Portrait No. 10 corresponds to the choic of a younger age level of the white group. The comments which accom pany this portrait of an Indian make it clear that the reasons for th choice were the same as those of the white boys of younger age level that is, interest in stories about Indians, in the life of the Indians, i their customs,[21] etc.

The portrait No. 26, the best-liked portrait of the white boys and second favorite of the white girls, means nothing to Negro children. Comparing comments of both white girls and boys, it seems that historica associations connected with this portrait (some think it is Jefferson, others that it is Washington or some other hero of that period) are very important. So is the interest in the technique in which this portrait is executed. Historical associations seem to be unimportant to Negro boys or do not occur to them in connection with a picture of this type. The interest in technique is as small in the Negro group as it is keen in the group of white children, especially in the boys. It is not possible to decide if this is due to training, school, and environment or to a generally indifferent attitude. The greater part of the white children were children who attend Saturday Museum classes, while very few Negro children do. Charcoal, however, the medium used in the portrait in question and found so much more interesting than the media used in other portraits, is not one which the children use when at the Museum classes.

The choices in both studies, Subject Preference and Portrait, are strongly dictated by their interest in the subject which is depicted. This is also the case in the choice of the textile patterns. But while the interests of whites and Negroes center on different subjects in the first study, and are of a different type in the second study, they seem to be very much the same in the third one. The same group of textiles interests both groups, the dissimilarities being only one of intensity and sex differences.[22] The most

[21] W. Mc (boy, 13): "It gives a swell view of Indian chief the color which they liked best they must have been very colorful people it almost tell the story of the Indian life." C. S. (boy, 13): "Because I like to see Indians' pictures. The Indians saved some of the settler. I like the feathers they wear and the tools they used dolls, rugs and the horses they used."

[22] For comparison: Comments of white and Negro children on the same patterns. No. 7. Ph. D. (white boy, 13): ". . . because of the heads of the elephant and the colors and the way they are set." H. L. (white boy, 13): ". . . because it is colored so finely and because it is more realistic than the others." H. Z. (white boy, 13): ". . . has realistic subject, patterns expressed with few color schemes. Brings in good character of these animals." J. H. (white boy, 14): "It has the graceful lines of animals . . . the animals fit right in the picture." W. M. (white boy, 14)

noticeable choice is that of the Indian pattern, No. 34.[23] Here white boys and Negro girls share their intense interest while Negro boys are not as interested and white girls still less. This preference seems to be connected with partiality for all things Indian on the part of the white boys, as explained in the Textile Pattern Study[24] and their greater liking for bright colors. The Negro girls seem to have made their decision, too, because of the bright colors. Although white children comment somewhat

"Has pretty colors and tells a story about the jungle." G. F. (white boy, 15): "I like 7 best because it reminds me of wild life. I believe the best patterns are made of pictures of wild life."

J. L. (Negro boy, 14): ". . . because it has a lot of action and the elephants look almost real; it shows the elephants on a stampede." A. G. (Negro girl, 15): ". . . looks so real and reminds you of a desert with a lot of elephants herding around." T. H. (Negro boy, 13): "I like it because of the colorful pictures. Also the way the elephants are put on the cloth. The cloth is very shiny like." A. J. (Negro boy, 13): "Because of the variety of colors and the way put in the picture and I like elephants and beautiful work." P. A. (Negro boy, 14): ". . . because it is large and reminds you that you should never forget to be kind to animals."

No. 10. F. G. (white boy, 14): "I like this pattern because it has a prehistoric accent to it. I also like it because it has dark green against cream. . . It has the arrows and helmet and sword of which I am fond of. I usually pick a pattern that has a red or blue in it. This one has only the blue. . . " G. M. (white boy, 15): ". . . has a variety of different work as stipple and plain flat painting reminds me of the best old time hunting outfits with swords and so forth." H. R. (white boy, 15): "It shows the war equipment that they used long ago. . ."

J. A. (Negro boy, 13): "Because I like pictures of adventure like it has a Knight and a flag of Crusades and other adventuresome pictures." C. M. (Negro boy, 13): "I like it because it shows the thing that Knights, Robin Hood and Vikings and other people used. . . . I also like it because it shows things noble people used." W. F. (Negro boy, 14): "It deals with the Middle Age and Indian bows and arrows."

[23] No. 34. S. M. (white boy, 15): "It's a simple pattern. I has my favorite colors red and green. It would make a beautiful Indian blanket. M. K. (white boy, 15): "Because it has a beautiful design." R. B. (white boy, 14): "I like this one because the colors are very good and the pattern is laid out well." V. M. (white boy, 14): "The picture has contrast and a definite pattern. The choice of color is good. The picture isn't crowded with meaningless objects." R. R. (white boy, 14): "Coloring scheme, the design stands out of the pattern. The design is similar to the design on some Indian rugs."

M. C. (Negro girl, 13): "Because of its color and its combination. Also it is put together so that the colors seem to be woven together. It is not too bright and not too dark. Also I like Red and White together." C. M. (Negro girl, 13): ". . . because it has been designed with little squares and my favorite design is squares—it also has a cross in it like the one Jesus Christ died on. That's why I like it best. There is a variety of color." W. P. (Negro girl, 13): ". . . clear and you can tell what it is about. They have arranged the color nicely and another reason is the color is brought out clearly and makes anyone enjoy looking at it." S. B. (Negro girl, 14): "I like that color by cause it match mine. And I like those dizen [design] because they are the same one. . . " D. R. (Negro girl, 14): "Because it is rather simple design rather than an elaborate design." G. S. (Negro boy, 15): ". . . most people like the design because of the crosses in the drawing (that is people how go to church)."

[24] *Journal of Educational Research*, XXXIII (September, 1939), pp. 7-35.

more frequently on the colors than Negro children, detailed questions about the color quality involved reveal that white girls of this age level are partial to delicate and subdued colors, contrary to both white boys who prefer bright colors and to younger girls who also prefer bright colors. Negro girls prefer bright colors to a greater extent than boys of both groups. In most other choices it is evident that representational patterns are preferred by both groups and especially if combined with striking color combinations, and that both groups prefer modern patterns. According to the results on answers to Question 7a and Question 11 of the Textile Pattern Study, one can assume that Negro children are more original in their ideas of the practical use of the patterns and less dependent on familiarity in their choices.

The question most interesting to us in this study was that of the importance of color for both groups. According to teachers and to a number of people interested in Negroes' reactions to colors, the sense and love of color is more developed in Negroes and is different from that of Whites. If we combine the results of all three studies, our comparison shows no difference as far as the amount of color comments are concerned (Graph XIIa), neither in spontaneous answers (Graph XII), nor in answers to leading questions (Graph XIII). Yet there is the fact of the choice of more colored pictures in the portrait study than of uncolored pictures (Graph VI), and that there are twice as many spontaneous answers which mention colors. It is the only significant difference found using the three possible ways of approach to color attitude of both Whites and Negroes: actual choice of pictures, spontaneous comments, answers to leading questions. This difference in the portrait study cannot be explained by the obvious interest in the mother-child subject, because Portrait No. 21 (J. A. D. Ingres: Mme. Baltard and child) shows a pencil drawing, also of a young mother and her child, in an affectionate attitude and is not a preferred portrait. Mother and child in Portrait 21 are well dressed in period costumes, while mother and child in the Negro girl's favorite Portrait 40 are in clothes that are timeless and poor. There are many comments on the fact that the people in Portrait 40 are poor. Therefore, in choosing this portrait, poorness may have been one of the many factors conducive to the choice besides the color. There remains the question if this partiality to color at an age when white children show a decline of interest in color is a fundamental difference between Whites and Negroes or a matter of developmental differences. Graph XIIa compares all those qualities which were mentioned in all

three studies. It shows that Negroes have a far greater subject interest than whites at this age level and a far smaller interest in technique and in reality. The Negroes' interest in these three qualities compares with the interests of younger white age levels. The conclusion, therefore, could be drawn that with the exception of emotional response the Negro children of these age levels react in most cases like white children of a younger age level. Their emotional reaction is stronger (but as boys of both groups are less emotional than the girls, this can be regarded as a sex attribute), and is not comparable to that of younger white age levels.

The medians and ranges of both groups, as taken from the P.L.R.[25] tests given in the schools, compare as follows: median 83, range 62-140 for Negroes; median 108.3, range 60-155 for the white children. The Negroes, as a group, are less articulate, although the number of reasons per comment is the same as that of the white group: white boys, 1.4, Negro boys, 1.5; white girls, 1.5, Negro girls, 1.7. The white children express themselves more correctly from the point of view of language, grammar, spelling, yet the white children's answers are less vivid, less impulsive and sound less genuine than those of the Negro children. The difference of interest and attitude, if at all explainable on a basis of intellectual development, could be explained by the difference in intelligence of the groups who submitted to the experiment. This interpretation, however, could only be sustained if the same experiments were made with identical P.L.R groups of white and Negro children. On the other hand the fact that white children's interest and sensitivity to color decreases with advancing age levels, points to a loss in the course of their development rather than to a gain. It is uncertain what the causes are for the definite decrease in color interest of white children or their growing interest in the reality of the picture. It may be schooling, home surroundings. It may be that purely intellectual and speculative interests overshadow sensual impressions, and that the latter remain more alert and unspoiled in the Negro child. Every one of these possibilities would have to be investigated with groups which are comparable as to mental age and socio-economic factors.

SUMMARY

The choice and reaction of groups of white and Negro children, aged 13 to 15, as to subject preference of pictures, portrait preference and textile pattern preference, were compared for the purpose of ascertain-

[25] Probable Learning Rate, computed from group tests, used in Cleveland schools.

ing differences and similarities between the two groups. The procedure was the same as in the preceding three studies of this series of articles.

Negro and white children differ widely in their picture choices made for subject preference. They also differ as to the most preferred portrait in the Portrait Study, but show similar interests as to the whole group of preferred portraits. They show great similarity in their choices of textile patterns.

The reasons offered for the choices of subject preference pictures differ only in the matter of changes to be made in the pictures. Negroes are less inclined to changes. Answers to the questionnaire of the portrait study show differences in several respects. Color and subject are mentioned twice as often (and more) by Negro children than by white ones, while facial expression, the reality of the picture and technique are far more important to white children. Emotional reactions are higher in both groups of girls than in boys. The portraits that have been chosen remind Negroes much more than Whites of people they are acquainted with. Again, as in the subject preference study, Negroes do not want anything changed in the portrait, while whites are much more likely to do so. In the Textile Pattern Study color, arrangement, subject, are most often mentioned and equally much by both groups. There is no group difference as to preference of abstract (geometrical) patterns to representational ones, nor is there any difference between the two groups as to the color factor in general. There is, however, a difference as to the kind of color preference inasmuch as white girls at that age level prefer delicate and subdued colors to bright ones, while the contrary takes place with Negro girls. Interest in the use of chosen textiles is of a different kind with Negroes and whites and so also the reaction to possible changes in the pattern. Negroes and whites alike claim to have patterns at home similar to some of those on exhibit, but Negroes are much more inclined to prefer patterns which do not resemble any of those they have at home.

The kind of pictures chosen from the Subject Preference and Portrait exhibits and the comments given point to a greater emotionality on the part of the Negroes and also to a more practical attitude in everyday life. The subject is of great influence and so is the color. The difference in reaction to color, to subject, reality and technique is non-existent when compared with the reaction of a group of younger white children. Comparison of median and range of P.L.R.'s between the two groups shows a difference of 25 points in favor of the whites (Negro children's median:

83, white children's median: 108). There is, therefore, a possibility that the difference in responses is due to a difference in mental development. However, this cannot be accepted as a fact unless the same results are found with groups of the same median. Another possible interpretation is that Negro children retain their color sensitivity to a greater extent than white children and at the expense of other factors.

A BRIEF HISTORICAL SKETCH OF THE NEGRO PUBLIC HIGH SCHOOL OF NORTH CAROLINA

NELSON H. HARRIS
Shaw University

Editor's note: Considerable progress has been made in recent years in providing better educational facilities for Negroes. The author furnishes an interesting account of the development of the Negro public high school in the State of North Carolina with data on the original act, growth in accredited schools, increases in enrollment, financial support, and the availability of Negro high schools.

NORTH CAROLINA was late in providing high-school facilities at public expense for both her white and her Negro population. The General Assembly of North Carolina did not make provisions for the establishment of public high schools until 1907.[1] Section 1, Chapter 820, Laws of 1907, reads as follows:

> With the consent of the State Board of Education, the County Board of Education in any county may, in its discretion, establish and maintain, for a term of not less than five school months in each school year, one or more public high schools for the county at such place or places as shall be most convenient for the pupils entitled to attend and most conducive to the purposes of said school or schools.

Prior to 1907 there were town and city high schools, but the main purpose of this act was to provide for the establishment of high schools in the several counties of the state. The act called for a state appropriation of $45,000 to aid primarily in the development of rural public high schools.[2] During the first year, 1907-1908, there were 7,144 white children enrolled in the public high schools of North Carolina, but no Negroes.[3] The first public high schools for Negroes were not established until 1914. These schools, established with the aid of the John F. Slater Fund, were located in Wake, Johnston, and Pamlico counties, and were known as "County Training Schools."[4]

[1] *Biennial Report of the Superintendent of Public Instruction.* Educational Publication No. 194 (Raleigh: North Carolina State Department of Public Instruction, 1933-34 and 1935-36), Pp. 31.

[2] *Ibid.*

[3] "*Public High Schools,*" *State School Facts,* VIII (August, 1932), p. 1.

[4] Data obtained from the files of the office of the Inspector of Negro High Schools, Division of Negro Education, North Carolina State Department of Public Instruction.

GROWTH OF ACCREDITED HIGH SCHOOLS FOR NEGROES

It was not until 1919[5] that the first high schools for Negroes were accredited. During this year 11 high schools were accredited, 7 private, and 4 public. The four public high schools were connected with state institutions of higher learning.

In 1923 the first Negro high schools supported and controlled by city or county school units were accredited at Method, Durham, Reidsville, and Wilmington.[6]

Table I shows the growth in numbers of Negro accredited high schools from 1918-19 to 1936-37.

TABLE I

GROWTH IN NUMBERS OF NEGRO ACCREDITED HIGH SCHOOLS
1918-19—1936-37*

Year	Public	Increase	Private	Increase	Total	Net Increase
1918-1919	4		7		11	
1921-1922	4		13	6	17	6
1922-1923	8	4	16	3	24	7
1923-1924	14	6	20	4	34	10
1924-1925	21	7	22	2	43	9
1925-1926	26	5	23	1	49	6
1926-1927	33	7	23		56	7
1927-1928	41	8	23		64	8
1928-1929	54	13	22	−1**	76	12
1929-1930	68	14	20	−2	88	12
1930-1931	80	12	18	−2	98	10
1931-1932	80		18		98	
1932-1933	53	13	15	−3	108	10
1933-1934	106	13	10	−5	116	8
1934-1935	112	6	7	−3	119	3
1935-1936	125	13	7	−3	132	13
1936-1937	127	2	8	1	135	3

*These data were obtained from the files of the office of the Inspector of Negro High Schools, Division of Negro Education, North Carolina State Department of Public Instruction.
**Minus sign means there was a decrease in the number of private schools.

Table I shows that the public accredited high schools for Negroes increased from 4 in 1918-19 to 127 in 1936-37, and the private accredited high schools from 7 to 8. The private accredited high schools reached their highest point in 1925-26 when there were 23. Beginning with 1928-29 there was a decrease in the number of private accredited high schools, and by 1935-36 the number had dropped to 7. In 1936-37, however, there was an increase to 8. The decrease in the number of private

[5] *Ibid.*
[6] *Ibid.*

accredited high schools is probably due to the rise of public high schools and the inability of many private schools to finance their programs. Between 1918-19 and 1933-34, 5 public and 4 private institutions of higher learning discontinued their high-school departments. During the same period, 7 private accredited high schools were transferred to public control and support, 4 were discontinued, and 5 were subsidized by the counties in which they are located.[1]

Table II, following, summarizes the growth in high school enrollment for accredited and non-accredited high schools.

TABLE II

HIGH SCHOOL ENROLLMENT FOR (A) NEGRO ACCREDITED HIGH SCHOOLS AND (B) FOR ALL TYPES OF NEGRO HIGH SCHOOLS (1922-23 to 1935-36)*

Year	(A) Accredited			(B) All Schools		
	Public	Private	Total	Public	Private	Total
1922-1923	1,237	1,556	2,793	1,477	2,000	3,477
1923-1924	2,978	2,164	5,142	4,715	2,652	7,367
1924-1925	4,241	2,164	6,507	6,507	3,014	9,521
1925-1926	5,564	2,911	8,475	8,237	3,088	11,325
1926-1927	6,841	3,117	9,958	9,073	3,350	12,423
1927-1928	8,060	3,268	11,328	10,942	3,388	14,330
1928-1929	10,625	2,882	13,507	13,251	3,003	16,254
1929-1930	12,679	2,691	15,307	14,924	2,746	17,670
1930-1931	14,657	2,140	16,672	16,672	2,202	18,874
1931-1932	15,876	1,937	17,813	17,886	2,004	19,890
1932-1933	18,538	1,756	20,294	20,124	1,756	21,980
1933-1934	21,258	1,159	22,417	23,550	1,159	24,709
1934-1935	22,817	†		25,643	†	
1935-1936	25,225	†		28,136	†	

*These data were obtained from the files of the office of the Inspector of Negro High Schools, Division of Negro Education, North Carolina State Department of Public Instruction.
†Not available.

The Negro high school enrollment, as shown in Table II, has increased very rapidly within the last fifteen years. For example, in 1922-23 the enrollment in the public accredited schools was 1,237, and 1,556 in the private accredited schools. The enrollment in all types of public high schools was 1,474, and 2,000 in all types of private secondary schools. The total high school enrollment in 1922-23 was 3,477. The enrollment in public accredited high schools in 1933-34 was 21, 258, and 1,159 in private accredited high schools. The enrollment in all types of public high schools in 1933-34 was 23,550, and the enrollment in all

[1] Data obtained from files of the office of the Inspector of Negro High Schools, Division of Negro Education, North Carolina State Department of Public Instruction.

types of private high schools was 1,159. The total enrollment in public and private accredited high schools in 1922-23 was 2,793 and the total enrollment in all types of high schools was 3,477. Whereas in 1933-34 the total enrollment in all high schools, accredited and non-accredited, reporting to the State High School Inspector was 24,709. In 1935-36 the enrollment in all types of public high schools was 28,136.

INCREASE IN THE NUMBER OF HIGH-SCHOOL GRADUATES

The number of Negro graduates has increased at a correspondingly rapid rate. In 1922-23 there were 84 graduates from the public accredited high schools and 186 from private accredited high schools. The total number from all types of public high schools was 92, and the grand total from all public and private schools was 310. In 1927-28, the number of graduates from public accredited high schools was 1,162, and 557 from private accredited schools. The number from all kinds of public high schools was 1,234, and the number from all types of high schools totalled 1,800. In 1932-33 there were 2,258 graduates from the public accredited high schools, and 259 from the private accredited high schools. The total number from public high schools was 2,295, and the number from all types of high schools was 2,554. The number of graduates from all public high schools in 1935-36, was 3,113.

These data indicate that the number of graduates from public high schools has constantly increased from 1922-23 to 1935-36 whereas the number from private high schools has dwindled. This simply shows that as the State has assumed its responsibility, the private high schools have gradually withdrawn.

The extent to which the State is meeting the present high-school needs of the Negro high school population will be discussed next.

PRESENT AVAILABILITY OF HIGH SCHOOL EDUCATION FOR NEGROES

According to the United States Census Report for 1930 there were, in North Carolina, 243,507 white children and 115,166 Negro children in the age group 15-19.[8] Of the 243,507 white children between the ages of 15 and 19, 101,486[9] or 41.6 percent were enrolled in public high schools. Of the 115,166 Negro children in the age group 15-19, 14,924[10] or 12.9 percent of the Negro children in the age group 15-19 were enrolled in

[8] These ages are chosen because they are probably more representative of those of Negro children attending high schools than the age group 14-17.
[9] *State School Facts, op. cit.*, p. 1.
[10] *Ibid.*

public high schools. In other words, there were 100,242 Negro childre between the ages of 15 and 19 who were not enrolled in public hig schools. A small number of these, however, were enrolled in private se ondary schools and as special pupils in the elementary grades. The specials are pupils who have completed the elementary school, but becau of the lack of high-school facilities are enrolled for elementary scho courses that they have not had. Such courses do not give high-scho credit. An investigation made by Newbold,[11] Director of the Division o Negro Education, North Carolina State Department of Public Instru tion, in the summer of 1934, showed that there were 3,580 Negro bo and girls in 42 counties who were eligible for high school and desire to attend, but had no way to attend because their parents were not abl to transport them or room and board them in a community in which high school was located.

Another measure of the availability of secondary education is th ratio between the total number of children of high-school age and th number of high-school teachers. For example, in 1929-30 there wer 609 Negro high-school teachers and 4,295[12] white high-school teachers i the North Carolina school system. During the same year there wer 115,166 Negro children and 243,507 white children in the age group 15-1 In order to take care of this potential Negro high-school population eac Negro high-school teacher would have to give instruction to approxi mately 189 pupils, where as each white teacher would have to teac approximately 56 children.

The distribution of high-school facilities for Negroes in the severa counties indicates further the degree to which the State is meeting it obligations. At least one Negro four-year public accredited high schoo is located in each of seventy of the one hundred counties. In two other counties, free tuition is provided in private accredited high schools an eight counties will soon have accredited high schools. Six counties pro vide from one to three years of standard high-school work; in twelv counties the Negro population is too scattered to support an accredited high school, and in two, progress is being made in the direction of ac credited high schools.[13]

[11] *Report of the Governor's Commission for the Study of Problems in the Edu cation of Negroes in North Carolina.* Publication No. 183 (Raleigh: North Carolina State Department of Public Instruction, 1935), Pp. 26.

[12] *National Survey of Secondary Education.* United States Office of Educatio Monograph, No. 7 (Washington: Government Printing Office, 1932), Pp. 9.

[13] Biennial Report of the Superintendent of Public Instruction of North Carolina *op. cit.*, Pp. 79.

The percentage that the Negro high-school enrollment is of the total enrollment in all Negro public schools in North Carolina is another indication of the extent and rapidity with which the State is making high-school opportunities available to Negroes. The percentage was 4.2 in 1926-27; 6.5 in 1930-31; 8.8 in 1933-34; 9.2 in 1934-35; and 10.9 in 1935-36.[14] The percent of white children of the total white enrollment in all public white schools in 1935-36 was 22.1.[15] These figures indicate that there has been a rapid increase in the percentage the Negro public high-school enrollment is of the total Negro public-school enrollment, and the rate for Negro children in 1935-36 was much lower than that for white children.

The increased educational opportunities offered to Negroes may be attributed to a considerable extent to the financial aid given by the following funds:[16]

1. *Julius Rosenwald Fund.*—This Fund has aided in the construction of 813 school buildings in North Carolina for Negroes. The contribution of this Fund to Negro public and private education in North Carolina amounts to more than $1,000,000.

2. *Slater Fund.*—This Fund up to July 1, 1936, had contributed $99,313.72 to be applied on salaries of Negro teachers and purchase of equipment in Negro county training and other types of Negro high schools.

3. *General Education Board.*—The General Education Board has been extremely liberal toward Negro education. This board has contributed more than $1,000,000 to public and private Negro school enterprises in the State.

The General Education Board is largely responsible for the organization and support of the Division of Negro Education in the Department of Public Instruction. It is The Division of Negro Education, under the direction of Mr. N. C. Newbold, that has been largely responsible for the growth of high-school facilities and educational opportunities in general for the Negroes of North Carolina.

Most of these gifts had a tendency to stimulate the State and the local community to do more for Negro education than they would ordinarily do without such outside encouragement.

[14] *Ibid.*, pp. 81.
[15] *Ibid.*, pp. 39.
[16] *Ibid.*, pp. 79.

SUMMARY

1. The first public high schools for Negroes were established
1914, but it was not until 1919 that the first high schools for Negro
were accredited. In 1918-19 there were four public accredited hi
schools for Negroes, in 1936-37 there were 127. The total number
accredited high schools for Negroes in 1936-37 was 135.

2. In 1922-23 the enrollment in public accredited high schools f
Negroes was 1,237, and 21,258 in 1933-34. The total enrollment in publ
high schools in 1935-36 was 28,136.

3. The number of graduates from all types of public high schoo
for Negroes in 1922-23 was 92. In 1935-36 there were 3,113 graduates
public high schools.

4. The State is constantly increasing the availability and accessibili
of high-school facilities for the Negro population. For example,
present practically every county in the State, with a sufficiently lar
Negro population, has at least one four-year accredited high school. The
is a further need, however, for accredited high schools in other counti
and additional high schools in the counties in which accredited hi
schools are already located.

5. The philanthropic funds have done much to stimulate and e
courage the development of high-school facilities as well as educati
for Negroes in general. The Rosenwald Fund has contributed more tha
$1,000,000 to aid public and private education in North Carolina; th
Slater Fund has given $199,313.72 to be applied on salaries of teache
and purchase of equipment in county training and other high school
and the General Education Board has aided public and private Negr
School enterprises in the State to the extent of more than $1,000,00

MEASURING THE TIME CONCEPTS OF CHILDREN

FREDERICK PISTOR
Hunter College of the City of New York

Editor's note: Students of child development and the teaching of the social studies have called attention, from time to time, to the difficulties experienced by children in conception of time and time relations. The author presents a psychological analysis of this concept with a battery of four tests for measuring it.

It has been found that children under eleven years of age attach little meaning to conventional names of time periods, especially dates.[1] Their growth in the knowledge of conventional time is a slow process starting at the age of four and arriving at adult level after the age of thirteen. Children appear to learn first the meaning of time words in ordinary use, such as the day or the week. Passing from these to an understanding of chronology and the arrangement of historical periods is a difficult matter. Not until the pupils are eight years old are they able to distinguish the past from the present. For years after they find it difficult to understand dates. Not until pupils are eleven years do they pay attention to subdivisions of the past, or period history.

THE RELATION OF TIME CONCEPTS TO SOCIAL STUDY

An adequate understanding of the development of children's time concepts is necessary for those who plan programs of social study, irrespective of the general type of curriculum organization. Conventional programs provide for a systematic study of history as a separate subject or in combination with one or more subjects. Newer programs emphasize study of integrated whole problems about present and local life which often lead to study of the past. In both types of programs the study of the past involves pupil understanding of the relationships between the past and the present. The accumulations of such understandings gradually result in the formation of time concepts. If pupil understanding is not present at early levels of maturity, it is futile to study the past too early in the life of the child. On the other hand if time concepts are acquired only through a certain type of instruction in history and chronology, then the school should provide it. Problems such as these depend for their answers upon scientific study.

[1] Oakden, E. C., and Sturt, M. "The Development of the Knowledge of Time in Children," *British Journal of Psychology*, XII (1922), pp. 309-336.

MEASUREMENT OF TIME CONCEPTS

Various kinds of measurement are employed in evaluating social studies programs. In addition to the usual paper-and-pencil tests of the ability to recall facts and to solve textbook problems, there are a few social beliefs and attitudes and a recent test of critical thinking.[2] In addition controlled observation techniques have been devised for measuring pupil participation in social study activities.[3]

Most of the paper-and-pencil tests can be used in ordinary classes. Controlled observation techniques modified to meet various situations can be used where a genuine[4] activity program is in operation. Such measuring instruments give information about the effectiveness of a social studies program in operation. Through their use the success of various pupils, classes, and schools can be determined. In addition to such use, measuring instruments have another function. When an experimenter wishes to investigate an area for which present tests and measurements are inappropriate he may devise new instruments to measure the specific traits under study. Such instruments, although valid for experimental purposes, may be of little use in present school situations. Tests constructed to measure children's time concepts may have little value at present as commercially distributed material. They are needed, however, in the study of the development of time concepts. They can be used in the analysis and classification of time concepts. They can be used in studies of maturation to determine levels of readiness for the various concepts. They can be used to measure the effect of systematic instruction in history and chronology. They can be used to appraise some of the newer practices in social studies. They can be used to open up new fields of inquiry and research.

SPECIFIC ABILITIES IN THE CONCEPTION OF TIME

Children's time concepts are subject to analysis and classification in various ways. One way of classifying them is according to curriculum element. Such elements as types of homes or kinds of land vehicles and their historic evolution are more readily understood by children than more difficult elements such as types of religious worship, forms of po-

[2] Wrightstone, J. W. *Test of Critical Thinking in the Social Studies.* New York: Teachers College, Columbia University, 1939.

[3] Pistor, F. "A Valid Scientific Appraisal of an Enterprise in Progressive Education," *Journal of Educational Research,* XXIX (Feb. 1935), pp. 433-448.

[4] Pistor, F. "Spotlighting Activity Programs," *Childhood Education,* XV (November, 1938), pp. 122-126.

logical organization, or steps in art expression. Through analysis of modern elementary social studies courses of study, a multitude of items can be found which lend themselves to evolutionary treatment. Such items can be studied for relative difficulty.

Another method of classifying time concepts is by the psychological process involved in studying the time relationships between two or more curriculum elements. Some such processes are:

1. Distinguishing a past event or artifact[5] from a present one.
2. Arranging events or artifacts in chronological order:
   a. Ordering chronologically past events related to a given present event.
   b. Ordering chronologically past events related to each other, without a present event being given.
   c. Ordering chronologically past events unrelated to each other but related to a given present event.
   d. Ordering chronologically past events unrelated to each other without a present event being given.
3. Recognizing the unique elements in a present event or artifact:
   a. Picking out an absurd or non-belonging element because it is obsolete and has been replaced by a more modern element.
   b. Locating an important element which is missing to complete the event or artifact.
4. Recognizing the unique elements in a past event or artifact:
   a. Picking out an absurd or non-belonging element because it is too modern for the historical period represented.
   b. Picking out an absurd or non-belonging element because it belongs to a previous historical period.
   c. Locating an important missing element to complete the event or artifact.
5. Selecting the dominant theme of a series of sequential events or artifacts and determining which is the next event or artifact, chronologically, to continue the theme.

MEASURING SOME OF THESE SPECIFIC ABILITIES

In order to measure some of these specific abilities in conceiving of time, a series of tests was devised. Each test consists of 72 items appearing in elementary social studies courses. The items cover social, industrial,

[5] Artifact, (archeological definition applied to history) a product of human workmanship.

political, and military history. The first experimental edition of s tests was verbal. Studies of this edition showed that pupils with read disabilities were penalized. Hence a second edition was used in which h of the test items are presented in non-verbal or picture form. The b tery of Time-Concepts Tests consists of four tests:

1. *The Time-Order Relationships Test.* Each of the seventy-o questions in this test contains five events or artifacts which are to ranked in order of chronological occurrence. The events or artifa are related in some way to each other and to a given event or artifa found in the present life of the child.

The accompanying illustration is one of the easier test items. It co sists of pictures, a wigwam, of a two-story house, of a cave shelter, o log cabin, and of tenament buildings. The child must select the ho which came first and rank it "1," the home which came next, rankin

FIGURE I.
SAMPLE TEST ITEM OF TIME-ORDER RELATIONSHIPS TEST

FIGURE II.
SAMPLE TEST ITEM OF TIME-ABSURDITIES TEST

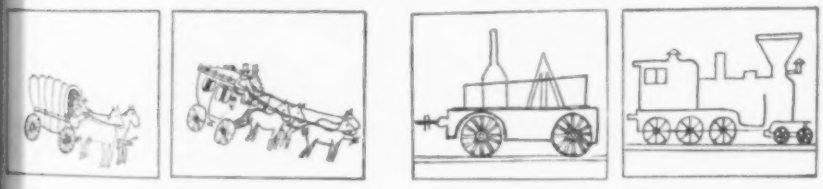
it "2," and so on. Since the question is presented in pictorial form there is no dependence upon the child's ability to read. Hence the test has a higher degree of validity, especially in the lower grades.

2. *The Time-Absurdities Test.* Each question in this test presents a situation of the present or the past made up on five important elements. One element is absurd and does not belong. The pupil must cross out the non-belonging item.

The accompanying picture is one of the test items. The well-known picture of Betsy Ross showing the flag to the visiting committee is used. The child must pick out the one item which is historically incorrect. In this case the item is the sewing machine which was not invented until many years later. The child draws an "X" over the wrong item.

3. *The Time-Analogies Test.* The questions in this test each present a historical comparison between two pairs of ideas. The first pair is given complete. The second pair has one item missing. The child must find this missing item from an accompanying multiple-choice list of items.

In the accompanying sample test question the stage coach is compared with the Conestoga wagon. The type of locomotive found operating during the days of the Conestoga wagon is given and the pupil must find the locomotive of the stage coach days. Pictures of five locomotives are given from which the child must select the proper picture.



Explanation:

The Conestoga Wagon	IS	to the Stage Coach	AS	This type of locomotive	IS	to this type of locomotive

FIGURE III.

SAMPLE TEST ITEM OF TIME-ANALOGIES TEST

(WRONG RESPONSES NOT GIVEN)

4. *The Time-Casual Sequence Test.* This test consists of questions which present a series of sequential events or artifacts. The pupil must study each series to select the dominant theme running through them and decide what the next event should be. Each series is accompanied by a multiple-choice list of events from which the child is to select one which best fits the series as the proper "next" event.

The sample question given here shows the evolution of the automobile. The first three forms are given and the pupil must select the proper fourth form from a group of five pictures.

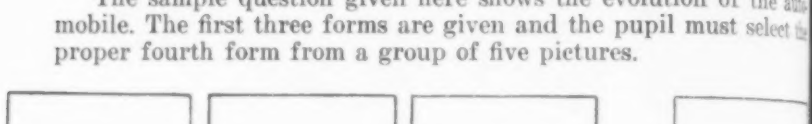


FIGURE IV.

SAMPLE TEST ITEM OF TIME-CAUSAL SEQUENCE TEST
(WRONG RESPONSES NOT GIVEN)

VALIDITY OF THE TEST

The battery of Time-Concepts Tests was validated in several ways.

A study was made of two groups of young adults. The first group consisted of junior college students who had completed a full-year course in World Civilization and other courses in college history. The second group consisted of students who were pursuing part-time work in adult education and whose high school graduation was of at least two years standing. None of the students in the second group had history instruction for two or more years. Each group was made up of sixty students. Each group was tested for knowledge of important facts in world history. The tests used were six informal history tests each made up of 100 objective-type questions. The purpose of this was to obtain two groups of mature students, one with recent history instruction and the other without such training. The means of the two groups were: 78.1 and 58.9 with a difference between the means of 19.2 in favor of the history group. The sigma of the difference of the means was .26. The students with recent college history were proved definitely superior to the students without such recent instruction.

The battery of Time-Concepts Tests was administered to these two groups. The mean score of the history group was 222.7 and the mean score of the non-history group was 212.3. The difference between the means was 10.4 in favor of the history group. The sigma of the difference of the means was .39. The students with recent college history were found to be superior to those in the other group. The correlations between the Time-Concepts Tests with the history tests were found to be as follows:

History Group: .894 ± .018; Non-History Group: .919 ± .013. There appears to be a close relationship between history knowledge and understanding of time relationships at the college level.

The Time-Concepts Tests were validated also by statistical analysis. In order to discover whether various tests in the battery measure different abilities better than do the usual tests of reading, history knowledge, or general intelligence, the intercorrelations between each test of the battery were made with the Modern School Achievement Tests of Reading and of History and the Otis Quick Scoring Test. These data are presented in Table I.

TABLE I

INTERCORRELATIONS AMONG THE FOUR TESTS OF THE TIME-CONCEPTS BATTERY AND CORRELATIONS OF EACH TEST WITH READING COMPREHENSION, HISTORY KNOWLEDGE, AND MENTAL AGE

	TEST 1 Time-Order Relationships	TEST 2 Time Absurdities	TEST 3 Time Analogies	TEST 4 Time Causal Sequence
Test 2 Time Absurdities	.62			
Test 3 Time Analogies	.59	.51		
Test 4 Time Causal Sequence	.56	.53	.47	
Reading Comprehension	.45	.32	.38	.33
History Knowledge	.25	.37	.32	.40
Mental Age	.65	.41	.47	.58

From the data in Table I the following conclusions may be drawn. The four tests have intercorrelations as follows: Test 1 with Test 2, .62; Test 1 with Test 3, .59; Test 1 with Test 4, .56; Test 2 with Test 3, .51; Test 2 with Test 4, .53; and Test 3 with Test 4, .47. Each test measures a relatively distinct and separate pattern of abilities to conceive of time relationships. Each of the four tests has a positive but relatively low correlation, ranging from .65 to .25 with scores of reading and history tests and with the mental ages derived from the Otis Quick Scoring Test. The abilities which the tests measure do not seem to be duplicated appreciably by typical tests of reading, history, and a verbal group intelligence test.

The Time-Concepts Tests were also checked for curricular validity by comparing the subject matter of the test items with a number of recent social studies courses. For example, a number of the test items are concerned with the historic development of vehicles. This topic is included very frequently in units on land, water, and air transportation appearing in modern elementary social studies courses of study. It was found that all of the items are valid for elementary school pupils.

RELIABILITY OF THE TESTS

In order to determine the accuracy and dependability of scores obtained in the Time-Concepts Tests, their reliability was determined by obtaining reliability coefficients by the odd-even item method corrected by the Spearman-Brown formula. The coefficients were:

Test 1:	Time-Order Relationships	.87
Test 2:	Time-Absurdities	.83
Test 3:	Time-Analysis	.80
Test 4:	Time Causal Sequence	.82
	Total Battery of Tests	.90

The reliability coefficients for the scores of the total battery indicate that this score has a high predictive value. The scores on each of the four tests have a fair to high value in predictive work.

SUMMARY

The need was shown for the study of the development of children's time concepts as a basis for intelligent planning of the elementary school social studies program. Time concepts were analyzed in terms of curriculum elements and psychological processes involved in studying time relationships between two or more curriculum elements. A battery of four Time-Concepts Tests was devised and proved a valid and reliable instrument for further research in the development of children's time concepts.

EDITORIALS

EDUCATIONAL CONVENTIONS

About this season of the year, orators and others go forth to enlighten the annual meetings of educational associations. With hopeful expectancy, teachers lay aside their usual tasks for a day or two to gain inspiration and instruction about problems of teaching.

In their pursuit of knowledge they encounter certain minor distractions in speakers who talk hours too long, speakers who cannot make themselves heard, and those who will not adhere to the limitations of a loud-speaker system. Some of these problems might be relieved by better business management.

One of the major distractions sometimes proves to be a generally critical attitude as to existing practices but with no constructive suggestions. Too often these problems arise from personal issues between the speaker and his colleagues at his home institution which have been the subject of long and heated local debate. These issues are fresh in the speaker's mind and now that he is far away from home and safe on the rostrum he may have his say without risk of successful contradiction. He enjoys the courtesy usually extended to visitors and feels vindicated because he has not been challenged.

While such attitudes might be stimulating to a small group of research workers well versed in all phases of a controversy and appreciative of the value of disagreement over minor points, the average classroom teacher does not get such constructive helps from it. In fact she gains an impression that everything in education is bad, including the new as well as the old. On the following Monday she returns to her pupils with resistance and disgust for educational conventions, with less respect for her own profession and determined to follow her own technique and procedures since all others have been proved to be bad. And so long until next year.

Harry J. Baker.

ARE DR. DOUGLASS' SUGGESTIONS FOR ABSTRACTING "ETHICAL" OR UNETHICAL?

THE present writer can heartily agree with the two points in the Editorial by Dr. Harl R. Douglass in the November issue of the *Journal of Educational Research*, namely, that more material is being published in Education (and in Psychology which is the writer's field of interest) than any one person can possibly read and secondly, that much of this material presents erroneous conclusions and should never see the light of day. Dr. Douglass thus emphasizes the important and growing need for an abstracting service, if those working in this field are to keep abreast of new material. And his reason for writing the Editorial is to insist that much of the published material should never be abstracted ("the author has seen fit to discard more than half of the studies available") because "conclusions may be far from truth." And he insists that such selection on the part of the abstractor is an "ethical responsibility" to protect the readers from "errors and confusion."

The present writer is not without some experience both in editing a scientific journal and in abstracting. He was Editor of the *Psychological Bulletin* for two years during which alternate issues were given over to the publication of abstracts,—an experiment sponsored by the American Psychological Association to determine the value of, and interest in an abstracting service. The success of this experiment lead to the establishment of the *Psychological Abstracts*, which has been supplying a splendid abstracting service for Psychology and allied fields for more than ten years and which has published more than 6,000 abstracts a year during most years of its existence. I have consistently abstracted several journals for the *Psychological Abstracts*, during all of this time and besides have edited a scientific journal in psychology for more than ten years since I was transferred from the *Psychological Bulletin*. One can imagine that I have spent some time considering the matter of policy in abstracting and, it seems to me, that Dr. Douglass' proposal is distinctly unethical.

The purpose of an abstracting service is to inform the reader of the work being done in his own and allied fields so that he may keep abreast of *all* of the new developments in a literature far too large for any single individual to read. An abstracting service is better than a bibliographical service in that it gives more information regarding the content of the several articles than one can get from the title alone. But one expects the reader of an abstracting service to read those articles

in the original that interest him or that may be valuable in his field work. If the abstractor has the right to select and reject articles because of their apparent validity, he is weighing his single opinion against that of the author, of the colleagues or superiors who may have seen the work in progress or in manuscript, and of the editor who has accepted the paper for publication. It was just such a failure of reviewers which led to the loss of Gregor Mendel's work in genetics for several decades until it was rediscovered and its value recognized. It is known, for example, that Mendel sent copies of all his publications to Charles Darwin, who completely failed to appreciate their importance!

Dr. Douglass indicates that much of the material in Education is never published and is merely buried in manuscript form in some departmental or university library. The failure of a reviewer to abstract such a paper, if its existence is known to him, quite unethically condemns it to the limbo of forgotten memories,—unethically, because its production has thus been a waste of time on the part of the person who conceived the idea, of the person who spent laborious hours in the actual doing of the research and of the persons whose time was wasted as subjects in the working out of the problem. Such a waste cannot really be justified by the mere fact that the production of this paper helped earn someone a higher degree and no more. The failure to abstract such a paper is also unethical because the reader of the abstracting service is deprived of information about the paper which may be the report of a problem on which he is working or on which he is about to start working. And it is unethical to deprive the field worker of the information because his critical opinion regarding the validity of the work may differ from that of the abstractor.

Be assured that I condemn the diffusion of false information by an abstracting service as much as does Dr. Douglass. But I cannot believe that his "ethical responsibility" of suppression is the only solution to the problem.

There are two policies in regard to abstracting which are adopted by different abstracting services. The one calls for *critical* abstracts; while the other utilizes merely uncritical but *informative* abstracts. For the critical type of abstracting, there need be no danger of the dissemination of false knowledge. If the abstractor finds errors in the formulation of the problem, in the experimental technique employed or in the interpretation of the results, he merely has to point out these errors in his abstract. If the informative and uncritical type of abstract is demanded by the

policy of the abstracting service, it would seem that, *ethically*, the abstractor should give the reference without other comment if he believes that the article contains serious and misleading errors. This method assures the reader that he is being informed of *all* of the work in the field, but the failure of the abstractor to include anything but the title indicates, by just that failure, how little he thinks of the content of the article in question. But at least the reader may have the opportunity to go to the paper and read it for himself and so form his own opinion regarding its validity.

Finally, I would raise one other point to which, I believe, Dr. Douglass would agree. This is a plea for more careful editing of articles accepted for publication. By this means, many papers would not appear which had better never be in print but, of even more importance, the careful editor may frequently indicate to the author errors of treatment or of interpretation and so may greatly increase the validity of the report without seriously increasing the amount of work on the part of the writer.

SAMUEL W. FERNBERGER

REVIEWS

Address all communications relative to book reviews to Editor Kai Jensen, University of Wisconsin, Madison, Wisconsin.

CONKLIN, EDMUND S., and FREEMAN, FRANK S. *Introductory Psychology for Students of Education* (New York: Henry Holt & Co., 1939), pp. xi + 557. $2.75.

The first thing one notices about this book is that it is beautifully printed and bound; the publisher has done his end of the job very well. But, after all, it is the contents that matter. Here are eight-een longish chapters, written by two ex-perts, which are supposed to give material of a first course in psychology for teach-ers-in-training. Most of the material is of the expected kind, although the topics dealt with by Conklin belong to general and abnormal psychology rather than to educational psychology. As illustrations, we may mention Perception, Sensory Sources of Knowledge, Handicap to or Distributors of Development, and Fa-tigue, Sleep and Drugs. To show how up-to-the-minute the author is he has a section on the drug marijuana. Free-man is far more 'educational' in that he discusses Remembering and Forgetting, the Nature of Learning, Conditions and Results of Learning, Intelligence and Individual Differences.

Both authors are learned in their sub-jects and write well. It is a pleasure to read such careful and balanced accounts of the topics they deal with. But the book has a grievous fault although many will count it a virtue. The authors have done the work the students ought to do for themselves. They have studied the evidence and rendered a thoughtful judg-ment upon it. But for the most part, they have not given the experimental data upon which the judgment is based. They have done the thing Dewey warned us against doing more than forty years ago. They have started the student at the "logical end" instead of the "psycholo-logical beginning." After all, Pestalozzi's old dictum—"from the concrete to the abstract" is still useful doctrine. My own belief is that beginners need lots of data to ponder over. A finished discus-sion such as this work provides, while ab-sorbingly interesting to the reviewer, would be of less value to his immature students.

Some of the discussions are of out-standing excellence. It is to be doubted if there is in existence as clear a brief description of "Points of View in Psy-chology" as is to be found in Freeman's Chapter XVIII. Even mature psycholo-gists can profit from his descriptions of Gestalt Psychology and especially of Psychoanalysis.

The doctrines preached are mildly ges-talt and organismic; they offend nobody. As a whole, the book is a noteworthy contribution to the literature of educa-cational psychology and thoroughly de-served the success it will undoubtedly achieve.

PETER SANDIFORD
University of Toronto

REED, HOMER B. *Psychology and Teach-ing of Secondary-School Subjects* (New York: Prentice-Hall, 1939), pp. xviii + 684. $3.25.

Although this new work contains a wealth of material not easily accessible to the average reader, it compares unfavorably with his earlier volume in a similar field, namely, his *Psychology of Elementary School Subjects*. The reason may lie in the fact that more work has been done of the psychology of elementary school subjects than of secondary studies. But Reed seems to have had no trouble in finding more than sufficient material. Rather does the fault lie in a somewhat mechanical arrangement of the material. For each subject — English Composition, English Literature, Social Studies, Mathematics and Science — he has, except for slight variations, a chapter each on (1) Objectives and Organization; (2) Practice; (3) Individual Differences; and (4) Motivation and Material. For Typewriting, the chapter headings are—Course of Improvement, and Methods of Practice and Individual Differences. It would have been better to have dealt with the material in a less stereotyped fashion, and also to have included discussions on such important branches as Art, Music, Shopwork, and Household Science.

There are some curious errors that have missed the proofreader's eye. Figure 1, for instance, has the perpendicular of Grade 9 median dividing the area in the ratio of 1 to 2, instead of 1:1. The solution of the express-trains problem on p. 489 is wrong. On p. 99 he does not distinguish between our various vocabularies, for instance the vocabulary we can recognize in reading and the vocabulary we can use in speech. Calderon's play (p. 164) is "Life is a Dream," not "Life in a Dream."

But the reader would get a totally wrong impression of the book if he thought that, because of these errors, it was worthless. As a matter of fact, it is the best in its field, but not the best that could be made. We still await a test on the Psychology of Secondary School Subjects. PETER SANDIFORD

University of Toronto

WATSON, GOODWIN, COTTRELL, DONALD [illegible] and LLOYD-JONES, ESTHER M. [illegible] *recting Teacher Education* (New Yo[rk]: Bureau of Publications, Teachers [Col]lege, Columbia University, 1938), [illegible] ix + 105. $1.35.

The current concern with teacher [edu]cation in this country has probably [never] been exceeded. The dissatisfaction [with] the schools, and the attempt to rem[edy] them for the better attainment of so[cial] objectives has centered in a widespr[ead] consideration of possible improvem[ents] in programs of teacher education. [As a] forward-looking statement of the pr[ob]lems and issues involved in reorganiz[ing] teacher education the volume under [con]sideration has appeared at a most appr[o]priate time. It is an attempt to vi[ew] teacher education as a whole and to su[g]gest practical readjustments based on [an] analysis of the present educational [ne]ed of America. It is unique in the em[pha]sis to which it focusses on objectives [and] specific changes needed to attain these [ob]jectives. Throughout the volume, [em]phasis is placed on constructing the [ty]program which will develop socially [in]minded teachers able to provide a kind [of] education which can successfully [co]with recent social developments.

The authors have presented a [com]and readable statement organized [in] twelve chapters dealing with the need [for] better teachers, objectives, selection, [gui]ance, standards, general education [and] professional education, participation [in] part of the professional preparation, research as a part of the professional program, new curriculum areas, institutional organization, physical plant [needs] and professional growth in service. [A]

each of these areas the authors have given a very brief analysis of several of the major issues and problems, as well as recommendations for the improvement of existing programs. The large number of specific suggestions precludes the possibility describing them or analyzing them in this short account.

The volume is very suggestive and is extremely valuable as a brief overview of problems and conditions in the field of teacher education. It represents a well organized presentation of the modern viewpoint in teacher education. It, of course, does not attempt to be a comprehensive statement. An elaboration of the procedures suggested and an evaluation of the proposals made is much to be desired. Certainly a next step in the direction of both elaboration and evaluation will be necessary before the proposals made can gain wide acceptance. This book would serve as an excellent starting point for the discussion and study of teacher education faculties desiring to restudy their programs. It should be of interest and value to all who contemplate participation or are at present engaged as staff members in a program of teacher education.

GORDON N. MACKENZIE
University of Wisconsin

BREED, FREDERICK S. *Education and the New Realism* (New York: The Macmillan Company, 1939), pp. xx + 237. $2.00.

Reality is independent of our perception of it, truth preexists, knowledge is the discovery of truth, and intelligence is adjustment to it. Thus say the neorealists says Professor Breed. Likewise say the so-called "Essentialists" in American education today. Otherwise say the pragmatists, John Dewey and the "Progressives." But what chance have the latter against the author's list of witnesses, comprised of "the profounder thought of this generation," "most men of science," and those last ditch reservists, "common sense" and "the common man"?

The usual rules of warfare between opposing philosophies are observed in this book. That is, the author stands his opponent up against a wall, gags him, pins a target sentence on him, retouches a part of it to serve as a bull's-eye, then backs off a couple of short paces and lets go with both barrels and a good loud ha, ha. As his enemy drops he rushes to him, administers first and second aid, and explains that, after all, the trouble has been mainly one of different emphases. Now from that the proper emphasis has been emphasized what is to prevent the two of them joining forces and together going gunning for that other fellow. But he leaves the gag in.

If one doesn't like philosophy even when it is palatably prepared, and if one finds it hard to take a philosophical fight seriously, he may still find a good deal in this book to interest and instruct him. The chapters on project versus subject, the integration of personality, the school and the social order, and the possibility of a science of education are excellent polemically and practically. It is worth while for spelling experts and other educational scientists to take fliers in philosophy now and then. It would be even better if an Essentialist and a Progressive would write a book together so that each might keep his eye on the other to prevent set-ups in the shooting.

MATTHEW H. WILLING
University of Wisconsin

O'CONNEL, GEOFFREY, *Naturalism in American Education* (New York: Benziger Brothers, 1938), pp. xxvi + 285. $2.75.

The intent of this book is to prove that a good many outstanding leaders in American education past and present have not believed or do not believe in God, immortality, revealed religion and the Ten Commandments. Their influence is increasingly tending to negate authority, obedience, conscience, responsibility, and due respect for teachers in our public schools. Naturalism, defined as the denial of supernaturalism, for a long time has been undermining the Christianity of the teaching profession and, it may therefore be assumed, is now gravely affecting the youth in the schools. Professor Mercier in an editorial preface welcomes this publication as an objective study in support of Catholic philosophy and educational theory.

In his analysis of the philosophy and educational thought of Mann, Barnard, Eliot, Dewey, Rugg, Kilpatrick, and Thorndike the author is if not thoroughly objective at least eminently fair. So much cannot be said for him with respect to some of the implications he asserts rather than proves. Originally a doctoral dissertation the book quite properly limits the inquiry. It does not canvass the whole field of naturalism or seek its appraisal on but the one point of its agnosticism or atheism. On that one point, which is regarded as crucial, naturalism is condemned *a priori*.

Those who follow the lines of naturalistic thinking in education may not all be conscious of its major premises. Such will receive some important light from this book. Others whose theory and practice in teaching are anything but naturalistic will derive from it encouragement and confirmation. It is a good thing for all of us to know just where we stand on such matters, and why. Besides the clarification here afforded of at least one aspect of naturalism, whether crucial or not, the volume contains very useful historical material and highly creditable analyses of essential elements in the philosophies of the contemporary leaders named above. It is interesting to read whether you regard its main thesis as tenable or not.

MATTHEW H. WILLING
University of Wisconsin

ANDERSON, DAVID F. With a Foreword by Professor Godfrey H. Thomson. *Practical Problems in Teaching Method: Case Studies of Teaching Method in Post-Primary School* (London: University of London Press, 1939), pp. xix + 156. 4/6.

The author, a professor of education in a Chinese college, has prepared this text as "an alternative to the observation method" of teacher training. Verbatim reports of seventeen lessons taught in selected Scottish schools (observed by the author while on furlough) are followed by carefully devised questions and exercises. It is intended that these lessons should provide the basis for discussion and analysis of teaching methods by tutorial groups. The great advantage claimed for this "dissection" method, as the author calls it, is that the "corpses" of these lessons can be examined and re-examined again and that "Only so (sic) can the inexperienced student-teacher grasp the teaching situation with sufficient thoroughness to make an intelligent application of the principles of method." (p. xvii).

The topics of the lessons reported are approximately at the Junior High School level.

FREDERICK MINKLER
University of Toronto

RESEARCH ABSTRACTS and BIBLIOGRAPHIES

Address all communications relative to research abstracts and bibliographies to A. S. Barr, University of Wisconsin, Madison, Wisconsin.

BULLETINS

BARROWS, ALICE, and SIMONSON, LEE. *The School Auditorium as a Theater,* Bulletin 1939, No. 4 (Washington: Office of Education, Federal Security Agency, 1939), 51 pp.

The authors discuss the effects of social and economic changes on the auditorium, some current methods of using the auditorium, current practices in constructing auditoriums, some examples of planning the auditorium for both school and community use, the theater as a part of the modern curriculum, planning a workable stage, and the lighting lay-out.

BROWN, EDWIN J., SCHRAMMEL, H. E., and NILES, IRENE. *An Annotated Bibliography of Dissertations Accepted for the Master of Science Degree, Kansas State College of Emporia, 1929-1939,* Bulletin of Information, Studies in Education No. 17 (Emporia, Kansas: Kansas State Teachers College, 1939), 61 pp.

An annotated bibliography of master's dissertations in Education, Psychology, English, Mathematics, and Modern Languages.

Educational Research Service. *The Twelve-Month Plan of Paying Teachers' Salaries,* Circular No. 10 (Washington: American Association of School Administrators and Research Division of the National Education Association, November, 1939), 39 pp.

This circular presents the results of a survey of the twelve-month plan of paying teachers' salaries, and discusses the extent of use of the twelve-month plan, adoption of the twelve-month plan, spacing of salary payments, accounting for summer payments, adjustment of salary when year's service is incomplete, and advantages and disadvantages of the plan.

FREDERIC, KATHERINE A. *State Personnel Administration with Special Reference to Departments of Education,* Staff Study No. 3 (Washington: The Advisory Committee on Education, 1939), 271 pp.

This bulletin presents a survey of state personnel problems discussing state officials and agencies concerned with personnel administration, chief state school officers, functions and classification of department personnel, selection of personnel, qualifications of department personnel, practices affecting employees in the service, length of service and provision for retirement, and findings and suggested improvements.

GLEN, EDITH D., and MEAD, A. R. *Seventh Grade Pupils from Their Own Personal Viewpoint,* A Chapter from a Survey of Twenty-eight Seventh Grade Pupil Groups in Florida, Bureau of Educational Research Bulletin No. 7 (Gainesville, Florida: University of Florida, March, 1939), 20 pp.

From a survey of twenty-eight seventh grade pupil groups, the authors present data on children's reading and study habits, feelings and relationships, day-dreams and ideals, hobbies, and favorite heroes, pictures, cartoons, radio programs and activities.

GLEN, EDITH D., and MEAD, A. R. *A Study of Pupil Initiative and Coöperation*, A Study of Individual Children in Social Relations, Data Gathered from 25 Schools Concerning Over Two Thousand Seventh Grade Pupils, Bureau of Educational Research Bulletin No. 11 (Gainesville, Florida: University of Florida, July, 1939), pp. 36.

The authors present the results of a study of pupil initiative in which data were obtained by means of teacher and pupil anecdotal records, teacher-judgment rating scales, and notes of personal interviews and observations.

REAVIS, WILLIAM C. *Democratic Practices in School Administration*, Proceedings of the Eighth Annual Conference for Administrative Officers of Public and Private Schools (Chicago: The University of Chicago Press, 1939), 214 pp.

This volume presents the proceedings of the Eighth Annual Conference for Administrative Officers of Public and Private Schools held by the Department of Education of the University of Chicago. The report contains a discussion of principles of democratic administration, training personnel for effective participation in democratic school administration, organizing a school system for democratic administration, importance of democratic practices in the instruction and management of pupils, and examples of democratic practices in educational administration.

ADMINISTRATION AND SUPERVISION

LAWTON, J. A. "A Study of Factors Useful in Choosing Candidates for the Teaching Profession," *The British Journal of Educational Psychology*, IX (June, 1939), pp. 131-144.

The author offers statistical data to support the feasibility of the pre-training selection of teachers.

NEWSOM, N. WILLIAM, and POLLACK, RICHARD S. "Computing Teacher Load: Analysis and Comparison of Various Methods," *The School Review*, XLVII (October, 1939), pp. 586-596.

The authors present an analysis and comparison of various methods of computing teacher load.

CURRICULA AND OBJECTIVES

BRINK, WILLIAM G. "Reading Interests of High School Pupils," *The School Review*, XLVII (October, 1939), pp. 613-621.

The author presents an analysis of the reading interests of high school pupils in which he found marked sex and individual differences.

FREDERICK, O. I. "The Curriculum in the Light of Research," *The School Review*, XLVII (October, 1939), pp. 575-585.

The author presents a survey of some 180 researches relating to the curriculum and its recent trends.

RALLISON, R. "The Scientific Interests of Senior School Children," *The British Journal of Educational Psychology*, IX (June, 1939), pp. 117-130.

From a survey of the scientific interests of 3514 seniors in the city of Newcastle-upon-Tyne and the County of Northumberland, the author finds that both boys and girls are interested in science topics with some sex differences

REICHART, R. R., and LASLETT, H. R. "A Study of the Value of High School Literature Courses," *The Journal of Educational Psychology*, XXX (September, 1939), pp. 421-439.

The authors present factual materials to indicate that the knowledge which college freshmen have presumably gained in their high school English literature courses is limited in amount, is vaguely comprehended, is very slightly related to what they read from choice, and is without much influence on the extent of their reading.

WOELTON, JAMES T., and ARNESEN, ARTHUR E. "Salt Lake City Experiments with Curriculum Development," *Teachers College Record*, XLI (November, 1939), pp. 135-156.

The authors present the results of an experimental study of a new core curriculum at Salt Lake City with favorable results.

EXPERIMENTAL STUDY OF LEARNING AND TEACHING

BLAIR, GLENN M., and GOODSON, MAX R. "Development of Scientific Thinking Through General Science," *The School Review*, XLVII (November, 1939), pp. 695-701.

The authors present the results of an experimental study from which they conclude that scientific thinking can be developed through general science when special effort is made to do so and exercises employed for this purpose.

BROGNER, ELLEN. "Grammar and Thought Approacher in Improving Sentence Structure," *The School Review*, XLVII (November, 1939), pp. 663-675.

The author presents the results of an experimental study of a grammar and non-grammar approach to improving sentence structure from which she concludes that while the pupils in the grammar group learned more grammar than the non-grammar group, they showed inferior ability in sentence structure.

KELLAR, WYLMA ROSE. "The Relative Contribution of Certain Factors to Individual Differences in Algebraic Problem Solving Ability," *The Journal of Experimental Education*, VIII (September, 1939), pp. 26-35.

The author supplies statistical data on the contribution of various factors to ability to solve problems in algebra.

OSBORN, WAYLAND W. "An Experiment in Teaching Resistance to Propaganda," *The Journal of Experimental Education*, VIII (September, 1939), pp. 1-17.

The author presents the results of an experimental study of teaching propaganda resistance in which resistance to propaganda was not successfully developed.

ULMER, GILBERT. "Teaching Geometry to Cultivate Reflective Thinking: An Experimental Study with 1239 High School Pupils," *The Journal of Experimental Education*, VIII (September, 1939), pp. 18-25.

The author presents the results of an experimental study of the teaching of geometry from which he concludes that this subject can be employed in the teaching of reflective thinking.

WOLFE, LILLIAN S. "An Experimental Study of Reversals in Reading," *The American Journal of Psychology*, LII (October, 1939), pp. 533-561.

From a clinical study of 18 boys chosen from the Weathersfield, Connecticut, public schools, the author concludes that a control of factors ordinarily em-

ployed to explain reading reversals would seem to indicate that these factors have little or nothing to do with reversals.

MEASUREMENTS, STATISTICS, AND SCIENTIFIC TECHNIQUES

LANNHOLM, GERALD V. "The Measurement of Ability in Capitalization and Punctuation," *The Journal of Experimental Education*, VIII (September, 1939), pp. 55-86.

The author presents a detailed statistical analysis of the measurement of ability in capitalization and punctuation.

PECHSTEIN, L. A., and MUNN, MERTON DEMING. "The Measurement of Social Maturity in Children," *The Elementary School Journal*, XL (October, 1939), pp. 113-123.

The authors present a scale for the measurement of the social maturity of primary school children with data on its validity and reliability.

WITTY, PAUL, and OTHERS "Intelligence in a Changing Universe," Special Issue, *Educational Method*, XIX (September, 1939), pp. 64-119.

The authors present a symposium on the nature and measurement of intelligence.

MISCELLANEOUS

Indiana State Teachers College. "Abstracts of Unpublished Masters' Theses Indiana State Teachers College 1939," *The Teachers College Journal*, I (July, 1939), pp. 125-146.

This issue of *The Teachers College Journal*, Indiana State Teachers College, Terre Haute, Indiana, supplies a list of abstracts of unpublished masters' theses for 1939.

STANTON, EDGAR A. "Effectiveness of Character-Building Agencies," *The Elementary School Journal*, XL (October, 1939), pp. 124-131.

From a study of 107 problem cases and 110 superior pupils in the Seattle public schools, the author offers data on the environmental background differences of these children and the agencies serving them.

RESEARCH NEWS and COMMUNICATIONS

Address all research news and communications to Carter V. Good, Teachers College, University of Cincinnati, Cincinnati, Ohio.

Yearbook for 1940.—The Thirty-Ninth Yearbook, National Society for the Study of Education, entitled "Intelligence: Its Nature and Nurture," has been prepared by a Committee appointed by the Board of Directors and composed of George D. Stoddard (State University of Iowa) *Chairman*, Leonard Carmichael (Tufts College), Frank N. Freeman (University of California), Florence Goodenough (University of Minnesota), Leta Hollingworth (Columbia University), Harold E. Jones (University of California), Lewis M. Terman (Stanford University), and Beth Wellman (State University of Iowa). Fifty-eight associates have also contributed to this yearbook. The present plan is to publish the material in two parts, bound separately, in which case Part I will be a comparative and critical exposition and Part II will present new research studies and summaries of current literature. A detailed analytical Table of Contents is planned to assist the reader in locating any given topic.

This Yearbook will permit readers familiar with the 1928 Yearbook on Intelligence to make instructive comparisons of present-day views with those set forth twelve years ago.

Survey of Education for Negroes.—The Advisory Committee for the Survey of the Higher Education of Negroes held its first meeting in the U. S. Office of Education, September 8 and 9, at the call of J. W. Studebaker, United States Commissioner of Education. The conference marked the launching of the 2-year study of higher education of Negroes which was approved by Congress at its last session, and will be conducted by the U. S. Office of Education. The Advisory Committee met with Fred J. Kelly, Chief of the Higher Education Division, and Ambrose Caliver, Senior specialist in the Education of Negroes, director and associate director, respectively, of the study, to assist in formulating the purposes of and procedures for this survey. The discussions during the 2-day meeting were in the main concerned with an adequate statement of the objectives of the survey; the appropriate social and economic data concerning Negroes which should be assembled; the appropriate data to be gathered concerning educational institutions for Negroes; the most satisfactory methods of securing the data; and special studies to be pursued in addition to the major purpose of the survey.

Pennsylvania Studies. — The Department of Public Instruction, during the past several years, has attempted to coördinate its research program with agencies of a national and local character. Forms used by the Research Division of the Department of Public Instruction have been made to conform with the standards and regulations selected and agreed upon in the regional conferences sponsored by the United States Office of

Education. The Division has attempted to summarize certain research studies conducted at the four state-aided institutions in Pennsylvania offering graduate work in education; namely, the University of Pennsylvania, Pennsylvania State College, University of Pittsburgh, and Temple University.

Another coöperative practice which has been underway is the undertaking of research studies suggested by the Department of Public Instruction. During the past year, the Department issued a research circular suggesting three hundred thesis titles which the Department felt would have a distinct value for Pennsylvania education. To date studies suggested in this circular are underway in three different states.

Research circulars reporting brief studies, and bulletins representing more comprehensive studies conducted by the Department, are released from time to time for the use of school officials throughout the Commonwealth. Publications issued by the Research Division during the past year deal with certification, salaries, school load, and science teaching. The type of studies conducted was influenced by suggestions received from county and district superintendents, as well as from supervising principals relative to the type of help which they most desired.

The Division has attempted in every way possible to coöperate with various research organizations and other groups of a similar nature. During the past year, it took an active part in preparing material pertaining to school costs for the "Report of the Committee on the Survey of School Costs," conducted by the Pennsylvania State Education Association. It has also coöperated with the Harrisburg Chapter of the American Statistical Association to coördinate research and statistics in education with similar work in other governmental agencies.

This information was forwarded by Carl D. Morneweck, Chief of Child Accounting and Research.

Texas Commission.—The Texas Commission on Coördination in Education is going into the new year with a streamlined program. Instead of inviting schools and colleges simply to engage in a testing program, the Comission is asking participation in a series of educational projects. At the college level the projects are as follows:

1. An experiment with individual differences in English in which a special effort will be made to provide for the needs of the most gifted. At the University of Texas, for example, eight or ten sections of English 1 have been set aside for superior students.

2. An experiment in the placement of college freshmen offering two high school units of Spanish and proposing to continue the language in college.

3. An experiment in teaching the use of libraries and study materials, in which an effort is made to motivate effort through the use of a library test.

4. An experiment in individual guidance in preparation for a guidance exhibit of the Commission at the 1940 meeting of the Association of Texas Colleges.

5. An experiment in adapting curricula, methods, and materials to meet the needs of college students of least academic aptitude.

6. Participation in a testing program as a part of the research of the Commission.

The projects below the college level are these:

1. A "minimum program" of end-of-year inventory and guidance tests, which will provide important information at

critical points in the progress of pupils through the schools.

2. A project designed to stimulate the use of cumulative records and the recording of the results of comparable tests.

3. An experiment in teaching pupils how to use libraries and books.

4. An experiment to explore the possibilities of adjusting to individual differences within the instructional group.

5. An experiment in motivating safety education through the use of tests.

Two research bulletins are issued each year. As a part of its service to schools and colleges the central office maintains an electrical test-scoring unit which is available at small cost. H. T. Manuel, University of Texas, is director of the Commission.

Texas Publications and Projects.—The University of Texas will issue a monthly magazine, *Education Today*, in charge of staff members of the School of Education, with J. G. Umstattd as editor. The advisory committee is composed of B. F. Pittenger, chairman; F. C. Ayer, Frederick Eby, D. K. Brace, Hob Gray, and Clara M. Parker. The purpose is to keep before its readers a comprehensive view of the American educational scene. One of the more specific editorial policies is to provide a medium for interchange of ideas between the United States and Latin America.

The Works Progress Administration has approved a grant of $71,290 for eight university research and service projects. The program includes three educational projects: (1) compilation of statistics and information covering 60 Texas schools, and designed to improve classroom instruction; (2) indexing and cataloging visual aid materials available to Texas schools; and (3) a survey of the health conditions and recreational activities of the state's low-income group, both urban and rural.

St. Louis Survey. — The Division of Field Studies of the Institute of Educational Research of Teachers College, Columbia University, has recently completed a survey of the public schools of St. Louis, Missouri. George D. Strayer, Director of the Division of Field Studies, and N. L. Engelhardt, Associate Director, were in general charge of the field work and the preparation of the report. Thirty members of the staff of Teachers College, five research associates, and sixty-five advanced graduate students participated actively in the work of the inquiry, in the collection of data, and in their interpretation.

The work of the survey was divided into two main fields of study. The first dealt with curriculum and teaching in the St. Louis schools; the second dealt with all phases of school administration. The complete report of the survey, consisting of 2375 typewritten pages, was mimeographed and distributed to members of the Board of Education and the administrative staff of the St. Louis schools. Three thousand copies of a briefer report consisting of 468 pages were printed for distribution throughout the city.

The major recommendations of the survey staff are of a most fundamental character. There is need in St. Louis, as in practically every other school system in the United States, for reorganization of the curriculum. There is even greater need for the reorganization of the present administrative structure of the school system. St. Louis operates under a multi-headed administrative staff, five in number, each one of whom is directly responsible to the Board of Education. The survey staff proposes that the superintendent of schools be named as chief

executive officer and that all other administrative officers report through him to the Board. Since the current organization is embodied in the law, amendments to this law were prepared by the survey staff in coöperation with the Attorney of the Board of Education, and were introduced into the Legislature of the State of Missouri. It is hoped that this fundamental recommendation may later be adopted.

Definite recommendations for economies totaling approximately $500,000 were made. The accomplishment of this reform waits upon the reorganization of the administrative staff proposed above and upon the willingness of the Board of Education to accept full responsibility for the elimination of jobs that are not essential and the adoption of a system of retirement for teachers who are more than 65 years of age. Some action has already been taken in this respect by the Board of Education.

This summary statement was prepared by George D. Strayer.

St. Louis Projects.—Each year for the past five years the Division of Tests and Measurements in St. Louis has been studying the problem of failures in high school. Particular attention has been given to failures made by pupils whose rating on mental ability is superior. In reports already published, numerous important conditions have been revealed. It has been shown, for example, that girls having the same mental ability as boys secure higher marks in school than the boys, especially from women teachers. More important still is the showing published last year that the only distinguishing factor found between pupils who fail and those who have outstanding success is that of purpose. Those who are failing appear to be following impulses or immediate desires rather than pursuing more distant purposes.

Continuing in this same field of research during the present year, the Division has secured the aid of a staff of NYA statistical clerks under the full-time supervision of a man also employed by the National Youth Administration. The study, as planned for the current year, is designed to ascertain the vocational interest of each high school senior and to study this in comparison with mental abilities, class records, personality traits as determined by tests, and with courses of study pursued. The comparisons should reveal possible relationships which might be of value in the future counseling and guidance of high school pupils.

The Division of Tests and Measurements in St. Louis consists of a director (George R. Johnson), three psychological examiners, a psychiatrist, and two clerks. The function of the Division is primarily to render a service to the school system in testing, conducting examinations of various kinds, answering inquiries, preparing reports for publication, collecting data, and pursuing research studies. It is apparent from this statement that research in the usually accepted sense is not the primary or major purpose of the Division; as one of its functions, however, research is receiving much aid and considerable impetus from the assignment of NYA clerks to work on projects sponsored by the director.

Ohio State Bureau of Research.—The *Educational Research Bulletin* for October 11, 1939, outlines the current projects of the Bureau of Educational Research, Ohio State University, under the direction of W. W. Charters.

The Personnel Division will concentrate upon the development of vocational-guidance instruments from a somewhat

new angle that seems to possess good possibilities.

The Tests Division, while working with a dozen departments on the campus that ask for technical aid and with state school centers which need professional assistance, will concentrate upon an evaluation program in the four years of the College of Education.

The major task of the Survey Division is to make a study of the Boys' Industrial School, a state institution for delinquent youth at Lancaster. In this study the School of Social Administration is coöperating. The Bureau will survey the instructional facilities of the School, and the faculty in Social Administration will study its welfare activities.

While the National Eight-Year Study occupies the major portion of the time of the head of the Division of High-School and College Relations, a substantial division of his attention is devoted to the development of a "little Eight-Year Study" in Ohio. Following the general pattern of the national study so far as organization of the plan is concerned, sixteen selected Ohio high schools are attacking the constructive problem of fitting their curriculums and instructional methods to the needs of youth. A demonstration of what can be done in a state without a foundation subsidy is in process of development.

In the Curriculum Division visual aids for safety education will be developed. In addition, a curriculum for recreation directors, based upon a job analysis, will be carried to completion during the year. This study has been carried on with the coöperation of the recreation division of the Works Progress Administration in Ohio.

The Appointments Division will pursue its ten-year studies of supply and demand of teachers in Ohio. It is expected that a study of this experience will be published during the year.

The Radio Division is primarily concerned with its national "Evaluation of School Broadcasts Study." A staff employed with funds provided by the General Education Board is developing instruments of evaluation which can be widely used and will be of value for measuring instruction in general education as well as in radio.

Bibliographical Projects at Indiana University. — Another bibliography is being prepared on school buildings, grounds, and equipment, supplementing the earlier bibliographies in this field and bringing them up to date. A classified digest of literature on kindergarten education from January, 1932, to September, 1939, is being compiled, and two studies are being made of the kindergartens in Indiana—one concerning their status and contribution and the other dealing with their support.

Graduate Work for Negroes.—A study of "Graduate Instruction for Negroes in the United States" has been made by Fred McCuistion as a doctoral dissertation at George Peabody College for Teachers, 1939.

For ten years the Southern Association of Colleges and Secondary Schools has extended its program of cultivation and rating to the Negro schools in its territory. During this time 20 colleges and 90 secondary schools have met the regular standards of the Association. These institutions have had an active organization of their own for the study and consideration of mutual problems. Studies and special programs have included curriculum construction and teacher education, the effects of minority status on the personality development of Negro

youths, problems of deans and registrars, guidance, etc.

The study of graduate instruction was a natural outgrowth of the Association's program in higher institutions and was suggested by the seven Negro institutions offering graduate work. It was sponsored by George Peabody College and supported by a grant from the General Education Board.

Less than a decade ago, the concern of those interested in Negro education was for adequate standards in the liberal arts college, while a decade earlier the task was one of developing colleges out of the loosely-organized institutions just emerging from the secondary school level. Graduate instruction for Negroes in the past has been conducted largely in Northern universities.

Soon after the study was begun, a decision of the United States Supreme Court in the case of a Negro student seeking admission to the Law School of the University of Missouri held that the University must admit the student, or that the State must furnish him with equal educational facilities within its borders. This decision stimulated much interest in the study. Southern leaders in education and politics have made little public comment, but the effect of the decision has already been felt in many universities and in at least a half dozen Southern legislatures.

The investigation reflects the program of graduate education against a background of separate school systems required by laws in 17 states and the District of Columbia, lack of wealth, and other conditions essential to the development of Negro schools in the region. Consideration is given to the extent and nature of graduate facilities, the geographic distribution of students and graduates, the nature of offerings on the graduate level, choices expressed by graduate students, training of faculties, financial support, library and laboratory facilities, and legal provisions in certain states.

The problems pointed out by the study include the lack of adequately-trained leadership; no clear definition of function; little knowledge of the nature and amount of graduate work needed; lack of a division of labor among graduate institutions; research barriers resulting from race prejudice, inadequate facilities and lack of access to existing materials; poor quality of undergraduate programs; and the low economic status of most graduate students.

North Carolina Bureau of Research—As one of its projects for improving its service to the schools and educational interests of the state and region, the University of North Carolina, through its Department of Education, wishes to announce the reorganization of the Bureau of Educational Research which it has maintained for sixteen years. The Bureau is prepared now to render services of a much greater scope. As far as possible these services will be rendered gratis and always at no more than cost.

The Bureau of Educational Research and Service includes:

I. Division of Tests and Measurement
   a. Advising on testing programs and the interpretation of tests.
   b. Acting as a distributing center for tests and scales so that school people may obtain promptly a variety of tests published by a number of publishers.

II. Divisions of Surveys
   a. Conducting at cost, when requested, surveys of the local needs and possible programs of improvements in the following fields: (1) housing, (2) curriculum, (3) extra-curricular activities, (4) guidance, (5) public relations program, (6) physical and health education, (7)

equipment for special departments, (8) general.

b. Assisting school people to organize and conduct self-surveys.

III. Division of Curriculum Studies

a. The maintenance of a curriculum laboratory on the campus where individuals or committees may find a large collection of the best city, county, and state courses of study; textbooks, and books and monographs on the curriculum; and a place to work with these materials.

b. Advising individuals or committees about curriculum problems.

IV. Division of Child Study and Guidance

a. Advice, conference, and reference service on problems of mental hygiene, child growth, and management.

b. Advice, conference, and reference service in the field of physical and health education.

c. Advice and assistance in organizing, operating, and improving programs of educational, vocational, social, health, and personality guidance.

V. Division of Professional Reference

a. Preparing upon request bibliographies of selected references on any professional topic or problem for teachers, parents, administrators, school board members, or lay organizations.

b. Assisting individuals or groups in finding suitable materials for use in connection with educational problems.

c. Advising by mail or by interview as to practices or opinions on professional questions or problems referred to the Bureau.

d. Providing speakers on educational subjects for organizations of teachers, administrators, service clubs, P.T.A. groups, and other organizations.

Staff.—In rendering services of the types indicated above, the Bureau, in addition to employing the members of the staff of the University of North Carolina at Chapel Hill, will seek the assistance of members of the State Department of Education, any qualified member of the staff of the Greater University, and particularly the specialists in elementary education, business education, home economics education, and library science at the Woman's College of the University and in agriculture and other phases of vocational education at the State College. The Bureau hopes also to enlist the services of specialists at Duke University, the State Teachers Colleges, and other institutions in the state on various problems and projects referred to it.

The Curriculum Laboratory.—The University Department of Education is developing rapidly a collection of the best city, county, and state courses of study in all subjects both for elementary and for secondary schools from all parts of the United States, to be made available to all individuals, committees, or graduate students wishing to study curriculum or course of study problems. Within a few weeks, more than a thousand publications will be made available in Peabody Hall for those interested in curriculum problems.

Division of Surveys. — The Bureau stands ready to conduct, to coöperate in, or to guide various types of surveys. Particularly where it is contemplated to add a new department, for example, in physical education or home economics, the Bureau will make available knowledge concerning practices elsewhere and the advice of leading experts in the state and elsewhere.

The Bureau is also willing to survey a school or school system with respect to its present organization for guidance, curriculum organization, and extracurricular activities, making recommendations for extension and improvement of its program, as well as evaluation of the effective features of the program in operation.

Among other activities may be mentioned the housing survey, with the recommendation of housing plans for twenty or thirty years ahead, based upon the present needs and housing facilities, probable growth of the school and district population, and the financial resources available. Surveys of library housing, equipment, and organization, and surveys of present buildings and grounds will be conducted.

In general, the division of surveys will attempt to bring to the assistance of the local staff and authorities the aid of specialists and experts, and to conduct the survey activities on a coöperative basis. Where surveys are conducted in other states the Bureau will rely at least in part on the services of specialists in the area in which the school is located.

Division of Tests and Measurements.—For sixteen years the Bureau has served as a distributing center for various types of standard tests, scales, and devices for measurement of ability and aptitude school achievement, and various aspe of child measurement from kindergar through college. The list of tests a measurements stocked at Chapel Hill f use of the schools has been thoroug revised and extended to include ma new and better tests. Tests are suppl to schools at the same rate charged the publishers.

Policy.—The Bureau has no desir urge its services. In fact, those who w be called upon to render service be many demands made upon their ti and energy. The Bureau is interested in attempting to be of service wh there is a distinctly felt need for out expert assistance. The present direc is Harl R. Douglass, who goes to t University of Colorado on March 1, 19 as director of the College of Educa and head of the department of ps chology.

JOURN

Volume XXXIII

THE PRE

Editor's no
teacher-learning
to improve the q
of recently pub
lection and guid

It is the purp
ments in the pret
1934, a fairly co
stitutions entitled
lished by Barr a
hundred fifty pa
lished. It will be
practices, and in
five years.

Many and dev
ments shall be e
teachers. Authori
cation is in need

Analysis of a
ment. Eliassen a
(65), Myers (85),
increasing enrollm
an oversupply of
shows a similar in
market for pedag

* The authors w
encouragement render
of Education, Univer